A taxonomic revision of *Symplocos* Jacq. (Symplocaceae) in Australia

L.W. Jessup

Summary

Jessup, L.W. (2011). A taxonomic revision of *Symplocos* Jacq. (Symplocaceae) in Australia. ***Austrobaileya* 8(3): 225–251.** The Australian taxa in the genus *Symplocos* are revised. Nineteen species are recognised and separate identification keys are provided for flowering and fruiting material. *Symplocos boonjee* Jessup, *S. bullata* Jessup and *S. oresbia* Jessup are described as new species, four taxa are raised in rank to species viz. *S. gittinsii* Jessup, *S. glabra* Jessup, *S. puberula* Jessup and *S. wooroonooran* Jessup and one new variety, *S. cyanocarpa* var. *pilosa* Jessup is described.

Key Words: Symplocaceae, *Symplocos*, Australia flora, Queensland flora, New South Wales flora, *Symplocos boonjee*, *Symplocos bullata*, *Symplocos cyanocarpa* var. *pilosa*, *Symplocos gittinsii*, *Symplocos glabra*, *Symplocos oresbia*, *Symplocos puberula*, *Symplocos wooroonooran*, new species, identification key

Laurence W. Jessup, Queensland Herbarium, Department of Environment and Resource Management, Brisbane Botanic Gardens, Mt Coot-tha Road, Toowong, Queensland 4066, Australia. Email: Laurence.Jessup@derm.qld.gov.au

Introduction

Symplocos Jacq. is a predominantly pantropical genus of over 320 species with highest species diversity in Asia, Malesia and the New World (Wang *et al.* 2004; Fritsch *et al.* 2006, 2008). *Symplocos* has been usually regarded as the sole generic representative of the Symplococeae with division into four subgenera and various sections based upon floral structure (Brand 1901). Molecular phylogenies to date have not supported this classification and have resulted in the elevation of *Symplocos* section *Cordyloblaste* to generic rank (as *Cordyloblaste* Hensch. ex Moritzi) and the recognition of only two subgenera and relatively few sections and series in *Symplocos* (Fritsch *et al.* 2008). This infrageneric classification of the genus is based on DNA sequence data from five genic regions (for 90 species) and 51 morphological characters (Fritsch *et al.* 2008). For the Australian region, all taxa can be classified into *Symplocos* (subgenus *Symplocos*) section *Lodhra* G.Don (Fritsch *et al.* 2008) and represents a major departure from that proposed by Nooteboom (1975).

Mueller (1862) was the first to recognise *Symplocos* in Australia (*S. thwaitesii* F.Muell.) and followed this with a second new species (*S. stawellii* F.Muell.) (Mueller 1865). Bentham (1869) recognised *Symplocos thwaitesii* but applied the name *S. spicata* var. *australis* Benth. to specimens of *S. stawellii*. Bailey (1890) described *Symplocos paucistaminea* F.Muell. & F.M.Bailey ex F.M.Bailey and in Bailey (1900b) treated the other Australian species in the same sense as Bentham (1869). Brand (1901) reinstated the name *Symplocos stawellii* and described the Lord Howe Island species *S. candelabrum* Brand. Nooteboom (1975) revised the Old World species creating a large number of synonyms and four subspecies and thirty-four varieties under the apparently polymorphic species *Symplocos cochinchinensis* (Lour.) S.Moore. He followed with a modified treatment of Australian *Symplocos* in Nooteboom (1981). Smith (1978, 1982) chose not to follow Nooteboom's broad taxonomic concept in his treatment of the Fijian species as did Green (1994) in the Oceanic Islands volume of the *Flora of Australia*.

Since 1981 new taxa from Australia have been recognised and some taxa that were placed in synonymy by Nooteboom have continued to be recognised as distinct in

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the field and in the herbarium particularly as more collections have been made (Jessup 1993, 1994, 1997, 2002, 2007, 2010). Also all of the Australian varieties described by Nooteboom under *Symplocos cochinchinensis* subsp. *thwaitesii* (F.Muell.) Noot. are now well-collected throughout their natural range and are represented in the herbarium by quality specimens that exhibit several distinct correlating character states sufficient to allow recognition as species. In this paper four previously described taxa are raised in rank to species and three new species and one new variety are described.

Materials and methods

This paper is based on herbarium collections in BM, BRI, CANB, CNS (previously QRS), K, L, MEL and NSW and some field observations by the author. All specimens cited have been seen by the author. Descriptions of flowers were prepared from material preserved in FAA or 70% alcohol and glycerol or reconstituted by briefly boiling in water. Descriptions of fruit were prepared from both dried and alcohol preserved material. Common abbreviations in the specimen citations are F.R. (Forest Reserve), L.A. (Logging Area), N.P. (National Park), S.F.R./S.F. (State Forest Reserve/State Forest), T.R. (Timber Reserve). The abbreviation *NCA* is for the Queensland Nature Conservation Act 1992 and its associated regulations. The abbreviation *EPBC* refers to the Environment Protection and Biodiversity Conservation Act 1999

Taxonomy

Symplocos Jacq., *Enum. Pl. Carib.* 5, 24 (1760). **Type species:** *S. martinicensis* Jacq.

Trees or shrubs, dioecious, polygamous or hermaphroditic. Leaves mostly spirally arranged, simple, penninerved, serrate, dentate, or entire, exstipulate. Inflorescence spicate, racemose, a thyrse or a panicle, or flowers solitary or fasciculate, axillary, rarely terminal. Flowers actinomorphic, bisexual or often functionally unisexual, subtended by a bract and 2 bracteoles. Ovary inferior or rarely semi-inferior. Hypanthium completely adnate to ovary. Calyx limb epigynous, mostly 5-lobed; lobes imbricate, persistent. Corolla gamopetalous but divided to near base into 3–10 petals (5 in Australian species), quincuncially imbricate, white, cream or pink. Stamens few to many, connate only at base, adnate to the base of the corolla, pentadelphous in alternipetalous bundles or (not in Australia) monadelphous; filaments terete. Anthers bilocular, introrse, dehiscing longitudinally. Disc inside staminal ring. Ovary 2–5-locular (3-locular in Australia) with 2–4 anatropous ovules per locule. Placentation axile but septa separating distally. Style 1, stigma simple, capitate or peltate. Fruit a monopyrenous drupe, crowned by persistent calyx lobes, frequently 1-celled and 1-seeded by abortion; mesocarp fleshy or not; endocarp hard, smooth or longitudinally ridged, with an apical depression. Seed with copious endosperm; embryo straight or curved.

The genus includes 300–350 species in tropical, subtropical and temperate parts of Asia, Malesia, North and South America, the West Indies, the Pacific islands and Australia. Nineteen species occur in Australia.

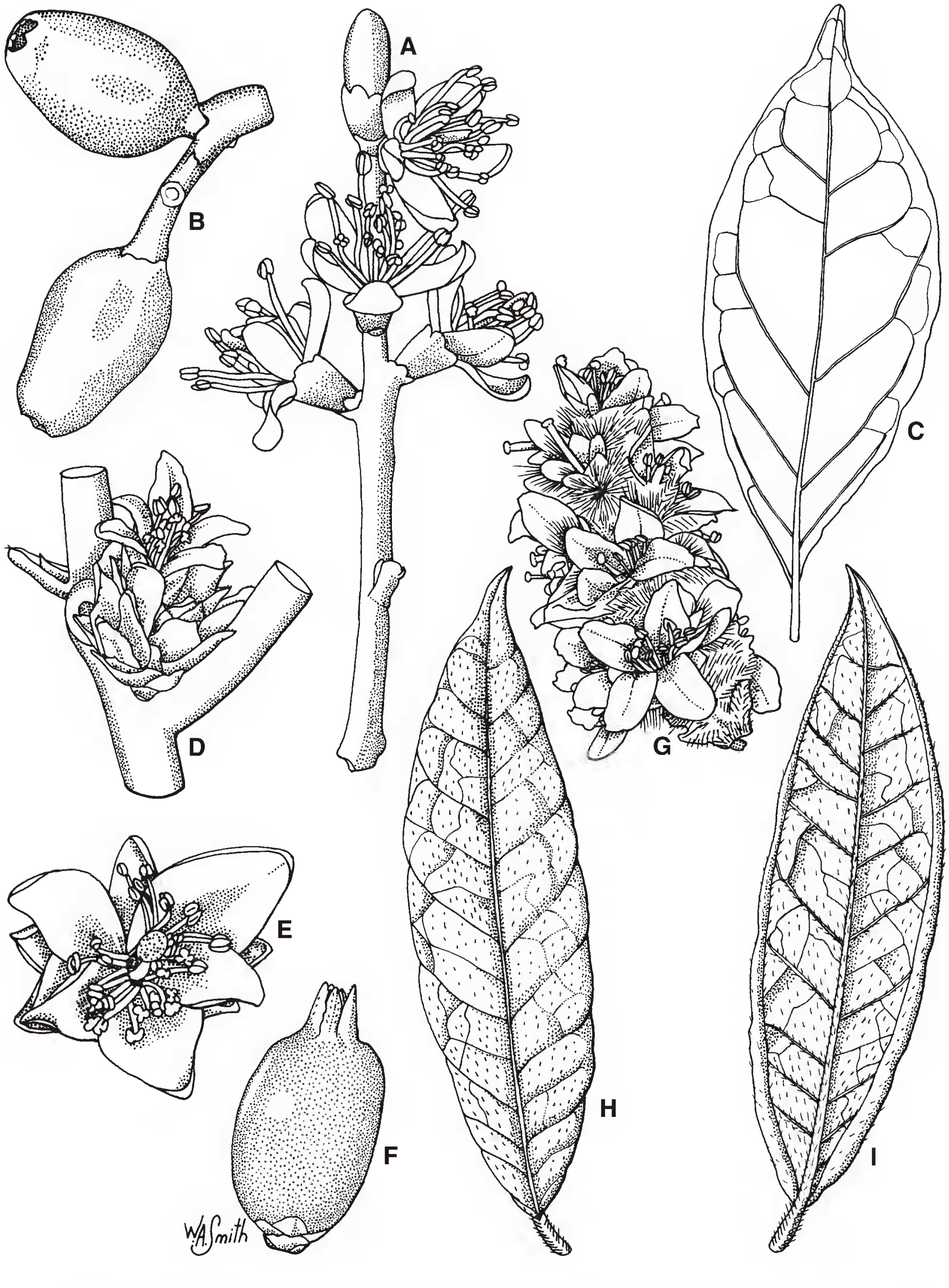


Fig. 1. ***Symplocos ampulliformis***. A. part of inflorescence with flowers and buds × 4, *Gray 3362* (BRI). B. fruit × 2, *Hyland 13459* (BRI). C. leaf abaxial surface × 1, *Volck 1389* (BRI). ***S. boonjee***. D. inflorescence with flowers × 3, *Gray 5575* (CNS). E. flower × 6, *Hyland 14345* (CNS). F. fruit × 2, *Gray 5575* (CNS). ***S. bullata***. G. inflorescence with flowers × 3. H. leaf adaxial surface × 1. I. leaf abaxial surface × 1. G–I from *Gray 2543* (BRI). Del. W.Smith.

Key to Australian *Symplocos* taxa using flowering specimens

1 Inflorescence racemose or a panicle of shortly pedicellate flowers **2**
1. Inflorescence spicate or a panicle or fascicle of sessile flowers, or flowers solitary, axillary **10**

2 Lamina margins serrate or dentate, sometimes obscurely denticulate **3**
2. Lamina margins denticulate or entire **7**

3 Petiole up to 4 mm long **4**
3. Petiole 5–17 mm long **5**

4 Young branchlets appressed puberulous; petals 1.4–1.6 mm wide; stamens mostly 15–20 . . . . . **2. S. baeuerlenii**
4. Young branchlets sparsely pilose with erect hairs; petals 2–2.5 mm wide; stamens 30–40 . . . . . **11. S. harroldii**

5 Young branchlets, petiole and inflorescence glabrous or nearly so **6**
5. Young branchlets, petiole and inflorescence appressed puberulous or pubescent . . . . . **16. S. puberula**

6 Calyx limb 1.7-2 mm long; stamens more than 40; petiole mostly 5–15 mm long . . . . . **18. S. thwaitesii**

6. Calyx limb 0.7–0.8 mm long; stamens less than 40; petiole mostly 20–30 mm long . . . . . **5. S. candelabrum**

7 Bracts up to 1.2 mm long; bracteoles up to 0.6 mm long; petals up to 4 mm long; stamens up to 20; style up to 2.5 mm long **8**

7. Bracts 1–2.5 mm long; bracteoles 0.6–1.2 mm long; petals 4 mm long or more; stamens 30–50; style 3 mm long or more **9**

8 Secondary veins mostly 7–9 pairs; basal ones not more acute and longer than distal ones; bracts caducous before anthesis; petals 2–2.5 mm long; disc and style glabrous . . . . . **14. S. oresbia**
8. Secondary veins mostly 4–6 pairs; basal ones more acute and longer than distal ones; bracts persistent to after anthesis; petals 3–3.7 mm long; disc and base of style puberulous . . . . . **1. S. ampulliformis**

9 Young branchlets glabrescent; lamina 2–6.5 cm long; inflorescence appressed puberulous; bracts ovate; style 3–3.5 mm long . . . . . **19. S. wooroonooran**
9. Young branchlets glabrous; lamina 7–15 cm long; inflorescence glabrous; bracts oblong; style 4.5–5 mm long . . . . . **8. S. glabra**

10 Young branchlets, petiole or inflorescence pilose, villous or pubescent with erect hairs **11**
10. Young branchlets glabrous or puberulous; petiole glabrous; inflorescence glabrous, puberulous, or shortly appressed pubescent **16**

11 Calyx densely pubescent outside **12**
11. Calyx glabrous or sparsely pubescent outside **13**

12 Secondary veins 6–12 pairs; inflorescence a few-flowered fascicle . . . . . **7. S. cyanocarpa** var. **pilosa**
12. Secondary veins mostly 15–20 pairs; inflorescence spicate with many flowers . . . . . **5. S. crassiramifera**

13 Sterile shoots rarely with cataphylls; twig hairs, reddish brown; midvein above pilose or villous **14**
13. Sterile shoots bearing cataphylls; twig hairs white, hyaline or pale ginger brown; midvein glabrous above **15**

14 Lamina in mature foliage bullate, margins more or less recurved . . . . **4. S. bullata**
14. Lamina not bullate, margins flat . . . . **15. S. paucistaminea**

15 Lamina sometimes bullate between veins, base mostly acutely cuneate, margins often recurved; bracts *c.* 2 mm long,; calyx lobes obtuse or rounded, entire or minutely denticulate . . . . **13. S. hylandii**
15. Lamina not bullate, base rounded or cordate, margins plane; bracts 3–9 mm long; calyx lobes acute, ciliate . . . . **12. S. hayesii**

16 Inflorescence axes usually branching above the base; **17**
16. Inflorescence axes solitary or clustered, unbranched above the base or flowers fasciculate or solitary **21**

17 Lamina margins crenulate and serrulate . . . . **17. S. stawellii**
17. Lamina margins entire, rarely some denticulations evident **18**

18 Stamens (12–)15–20 . . . . **19**
18. Stamens 30–70 . . . . **20**

19 Secondary veins mostly 7–9 pairs; basal ones not more acute and longer than distal ones; bracts caducous before anthesis; petals 2–2.5 mm long; disc and style glabrous . . . . **14. S. oresbia**

19. Secondary veins mostly 4–6 pairs; basal ones often more acute and longer than distal ones; bracts persistent to after anthesis; petals 3–3.7 mm long; disc and base of style puberulous . . . . **1. S. ampulliformis**

20 Petiole 3–10 mm long; inflorescence glabrous; bracts oblong; stamens mostly 30–50; style 4.5– mm long . . . . **9. S. glabra**

20. Petiole 10–35 mm long; inflorescence sparsely appressed puberulous; bracts broadly ovate or depressed ovate; stamens mostly 60–70; style 3.5–4 mm long . . . . **8. S. gittinsii**

21 Inflorescence usually several clustered axillary spikes to 1.5 cm long; bracts 1.2–1.5 mm long, sometimes denticulate, pubescent; style 2–2.5 mm long . . . . **10. S. graniticola**
21. Inflorescence a fascicle, or flowers solitary; bracts 1.5 mm long or more; style 2.5–3.5 mm long **22**

22 Calyx lobes 1–1.4 mm long; petals rounded; filaments pilose . . . . **7. S. cyanocarpa** var. **cyanocarpa**
22. Calyx lobes 4–5.5 mm long; petals acute; filaments glabrous . . . . **3. S. boonjee**

Key to Australian *Symplocos* taxa using fruiting specimens

1 Dry fruit ampulliform (flask-shaped) **2**
1. Dry fruit globose, depressed globose, or ellipsoid to subcylindrical, rarely ovoid or obovoid **10**

2 Young branchlets and petiole pilose or villous; infructescence spicate, pilose or villous **3**
2. Young branchlets and petiole glabrous, puberulous, or appressed pubescent; infructescence paniculate, or racemose, glabrous or appressed pubescent **6**

3 Dry fruit 5–6 mm long, 3.5–4 mm wide . . . . **15. S. paucistaminea**
3. Dry fruit 7–10 mm long, 4–5 mm wide **4**

4 Secondary veins 15–20 pairs . . . . **6. S. crassiramifera**
4. Secondary veins 7–12 pairs **5**

5 Midvein densely villous on upper (adaxial) surface of lamina . . . . **4. S. bullata**
5. Midvein glabrous on upper (adaxial) surface of lamina . . . . **13. S. hylandii**

6 Lamina margins not entire, sometimes teeth scarcely evident on recurved margins **7**
6. Lamina margins entire **8**

7 Young branchlets and petiole glabrous; lamina margins flat . . . . **18. S. thwaitesii**
7. Young branchlets puberulous or pubescent; petiole glabrescent; lamina margins recurved . . . . **16. S. puberula**

8 Secondary veins mostly 4–6 pairs; basal pair more acute and longer; style pubescent at base . . . . **1. S. ampulliformis**
8. Secondary veins 7–12 pairs, not more acute and longer near base; style glabrous **9**

9 Young branchlets puberulous or pubescent, glabrescent; fruit 5.8–6.3 mm long, 4–5.5 mm wide . . . . **19. S. wooroonooran**
9. Young branchlets glabrous; fruit 10–15 mm long; 7–9 mm wide . . . . **14. S. oresbia**

10 Infructescence a glomerule or fruit solitary at each node **11**
10. Infructescence spicate or racemose, branched or unbranched **12**

11 Fruit glabrous; calyx lobes 4–5.5 mm long . . . . **3. S. boonjee**
11. Fruit usually not glabrous; calyx lobes 1–1.4 mm long . . . . **7. S. cyanocarpa**

12 Lamina margins entire or sometimes obscurely denticulate **13**
12. Lamina margins serrate or dentate **16**

13 Fruit mostly obovoid (Lord Howe Island endemic) . . . . **5. S. candelabrum**
13. Fruit globose, ovoid or ellipsoid (Australian mainland) **14**

14 Lamina length usually 3-6 times width . . . . **10. S. graniticola**
14. Lamina length usually less than 3 times width **15**

15 Petioles 10–35 mm long. Pedicels 0–0.2 mm long; fruit 6–7 mm long; 4–5 mm wide . . . . **8. S. gittinsii**
15. Petioles 3–10 mm long. Pedicels 0.2–2 mm long; fruit 9–11 mm long; 8–10 mm wide . . . . **9. S. glabra**

16 Secondary and tertiary veins raised above (adaxially) (dried leaves) **17**
16. Secondary and tertiary veins not raised above (adaxially) **19**

17 Young branchlets, bud scales and infructescence axis glabrous . . . . **18. S. thwaitesii**
17. Young branchlets, bud scales and infructescence axis not glabrous **18**

18 Young branchlets sparsely appressed puberulous; petiole 6–25 mm long; fruit 3.5–4.5 mm wide . . . . **17. S. stawellii**
18. Young branchlets sparsely pilose with erect hairs; petiole 3–4 mm long; fruit 6–7 mm wide . . . . **11. S. harroldii**

19 Shoots usually without cataphylls; lamina 0.7–2 cm wide, sparsely appressed puberulous on underside (abaxially), base acutely cuneate; fruit 4–9 mm long. . . . . **2. S. baeuerlenii**
19. Shoots usually bearing scattered cataphylls; lamina 2.5–5.5 cm wide, sparsely pilose on underside (abaxially), base rounded or cordate; fruit 15–20 mm long . . . . **12. S. hayesii**

1. Symplocos ampulliformis C.T.White, *Proc. Roy. Soc. Queensland* 50: 81 (1939). **Type:** Queensland. Cook District: Mt Spurgeon, September 1936, *C.T.White 10581* (holo: BRI; iso: A *n.v.*; BM).

Illustrations: Hyland *et al.* (2010).

Shrub or small tree to 10m. Shoots sparsely appressed puberulous, glabrescent; young branchlets glabrous. Leaves chartaceous; lamina oblanceolate or elliptic, 4.5–12 cm long, 2–5 cm wide, acuminate at apex, acute or attenuate at base, glabrous; margins recurved, entire or nearly so; secondary veins mostly 4–6 pairs, the basal pair often longer and more acute; petiole 4–10 mm long, glabrous. Inflorescence usually a cluster of racemose axes to 2 cm long, glabrous or sparsely appressed puberulous, sometimes shortly branched near base; bracts and bracteoles ovate, puberulous or ciliate, persistent to anthesis, bracts *c.* 0.5 mm long, bracteoles *c.* 0.4 mm long. Calyx limb 0.6–0.8 mm long, sparsely puberulous, glabrescent; lobes depressed ovate or rounded, 0.3–0.5 mm long, glabrescent, margins ciliate. Petals oblong or narrowly obovate, 2.5–3.5 mm long, white, glabrous. Stamens (12–)15, 1.5–4 mm long. Disc puberulous. Style *c.* 2.5 mm long, puberulous at base. Fruit ampulliform to narrowly ovoid, 10–15 mm long, 5–6 mm wide, blue to blue-black or purple-black. **Fig. 1A–C.**

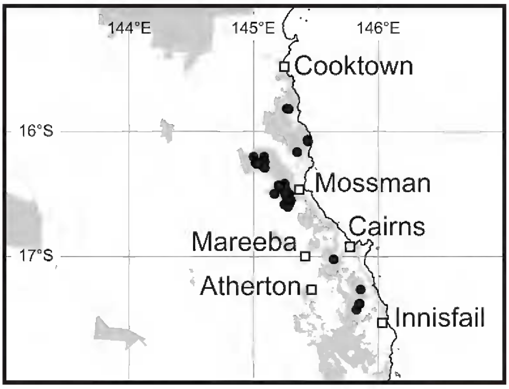
***Additional selected specimens examined*: Queensland.** Cook District: N.P.R. 133, summit of Mt Sorrow walking track, Cape Tribulation, Nov 2000, *Ford AF2524 et al.* (BRI); S.F.R.144, Parish of Whypalla, Bower Bird L.A., Dec 1987, *Hyland 13459* (BRI, CNS); *loc. cit.*, May 1989, *Gray 5046* (BRI, CNS); S.F.R.144, Dasyurid L.A., Apr 1980, *Gray 1682* (BRI, CNS); S.F.R.144, Chowchilla L.A., Jul 1982, *Gray 2663* (BRI, CNS); Mt Lewis, SW of Mossman, Aug 1957, *Volck 1389* (BRI); S.F.R.143, Parish of Riflemead, North Mary L.A., Dec 1984, *Gray 3758* (BRI); S.F.R.143, South Mary L.A., Aug 1973, *Irvine 612* (BRI); S.F.R.143, Parish of Riflemead, South Mary L.A., *Gray 3362* (BRI, CNS); S.F.R.143, Parish of Riflemead, Carbine L.A., Nov 1987, *Hyland 25249RFK* (BRI); *loc. cit.*, Jan 1985, *Gray 3835* (BRI); S.F.R. 143, Bushy L.A., Feb 1982, *Hyland 11691*(BRI); T.R.143, Zarda L.A., Sep 1973, *Hyland 2884RFK* (BRI); Along Falchetti Track to the Mitchell Bomber crash site on the NE peak of Mt Bartle Frere, Jul 2001, *Jago 6011 & Gandini* (BRI); Upper E Mt Bartle Frere, Oct 1985, *Godwin C2900* (BRI).

Distribution and habitat: This species is endemic to Queensland in the Wet Tropics and occurs on Mt Sorrow near Cape Tribulation, the Mt Windsor Tableland, Mt Carbine Tableland, in the vicinity of Mount Lewis, and on Mt Bartle Frere (**Map 1**), in upland and montane notophyll and microphyll vineforest on granite, granodiorite (all upper montane localities) and phyllite substrates.

Phenology: Flowers are recorded from March to May; fruit from January to July.

Notes: This species was treated as *Symplocos cochinchinensis* var. *montana* (C.T.White) Noot. (as *S. cochinchinensis* subsp. *thwaitesii* var. *montana*) in Nooteboom (1982).

Conservation status: *Symplocos ampulliformis* is currently listed as Near Threatened under the *NCA*.



Map 1. Distribution of *Symplocos ampulliformis*

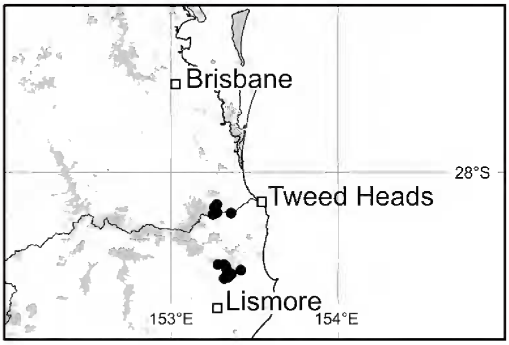
2. Symplocos baeuerlenii R.T.Baker, *Proc. Linn. Soc. New South Wales* 27: 594, t. 28 (1902). **Type:** New South Wales. Tumbulgum, Murwillumbah, *s.dat.*, *W. Bäuerlen s.n.* (holo: NSW; iso: MEL).

Illustrations: Floyd (1989: 396); Leiper *et al.* (2008: 336).

Shrub or small tree to 10 m. Shoots and young branchlets puberulous. Leaves coriaceous; lamina narrowly elliptic or lanceolate, 1.5–8 cm long, 0.7–2 cm wide, acuminate at apex, acute at base, glabrous or with a few hairs on midvein and undersurface; margins mostly serrate; secondary veins mostly 7–10 pairs; petiole 2–4 mm long, puberulous, glabrescent. Inflorescence racemose, to 0.6 cm or flowers solitary, puberulous; pedicels to 1 mm long; bracts and bracteoles puberulous, semi-persistent, bracts acutely triangular, 0.8–1.2 mm long, bracteoles ovate, 0.3–0.5 mm long. Calyx limb 0.7–1.1 mm long, glabrous; lobes depressed ovate or rounded, 0.5–0.8 mm long, glabrous. Petals obovate, 2–3 mm long, 1.4–1.6 mm wide, white, glabrous. Stamens mostly 15–20, 1.5–3 mm long. Disc pubescent. Style 1.5–2.5 mm long, pubescent at base. Fruit ovoid, to 9 mm long, red.

Additional selected specimens examined: **Queensland**. Moreton District: Lyrebird Ridge Road, Springbrook Plateau, Dec 1993, *Grimshaw G259* (BRI); Springbrook, Aug 1945, *Blake 15892* (BRI); *loc. cit.*, Sep 1929, *Rudder 4022* (BRI, L); *loc. cit.*, Sep 1929, *White 6265* (BRI); *loc. cit.*, Aug 1930, *White 7059* (BM, BRI); Track to 'Best of All' Lookout, Springbrook, Jul 1977, *McDonald 1946 & Elsol* (BRI); End of Currumbin Valley road, Mt Cougal N.P., Nov 1992, *Thomas 96 & Barry* (BRI). **New South Wales.** Mt Nardi, Goonimbar S.F., Feb 1979, *Floyd 1194* (BRI); Whian Whian S.F., Jun 1945, *White 12758* (BRI); *loc. cit.*, Jun 1947, *Hayes s.n.* (BRI [AQ537353]); *loc. cit.*, Nov 1949, *White s.n.* (BRI [AQ335709]); *loc. cit.*, 1953–1958, *Webb & Tracey s.n.* (BRI [AQ84368]); Minyon, near Mullimbimby, Aug 1936, *White 10480* (BRI); Whian Whian, N of Lismore, Jun 1965, *Smith 12303 et al.* (BRI); *c.* 6 km W of Minyon Falls, Whian Whian S.F., Jul 1975, *Williams s.n.* (BRI [AQ504389]).

Distribution and habitat: This species is endemic to south-east Queensland and north-east New South Wales where it occurs from the Macpherson Range near Springbrook, south to Lismore (**Map 2**), in microphyll and notophyll vineforests on substrates derived from basalt and enriched rhyolite.



Map 2. Distribution of *Symplocos baeuerlenii*

Phenology: Flowers are recorded from July to September; fruit in January and February.

Notes: This species was included under *Symplocos cochinchinensis* var. *montana* (as *S. cochinchinensis* subsp. *thwaitesii* var. *montana*) in Nooteboom (1982).

Conservation status: *Symplocos baeuerlenii* is currently listed as Vulnerable under the *NCA*.

3. Symplocos boonjee Jessup **species nova** *S. cyanocarpam* simulans sed bracteis longioribus (2–5 mm contra 1.5–1.7 mm longis) bracteolis longioribus (2–3 mm contra 0.5–1 mm) sepalis longioribus (4–5.5 mm contra 1–1.4 mm) petalis ovatis acutis et filamentis glabris differt. **Typus:** Queensland. Cook District: Wooroonooran National Park, Stockwellia site, 10 July 2000, *P.I.Forster*

PIF25915, R.Booth & R.Jensen (holo: BRI; *isotypi distribuendi*).

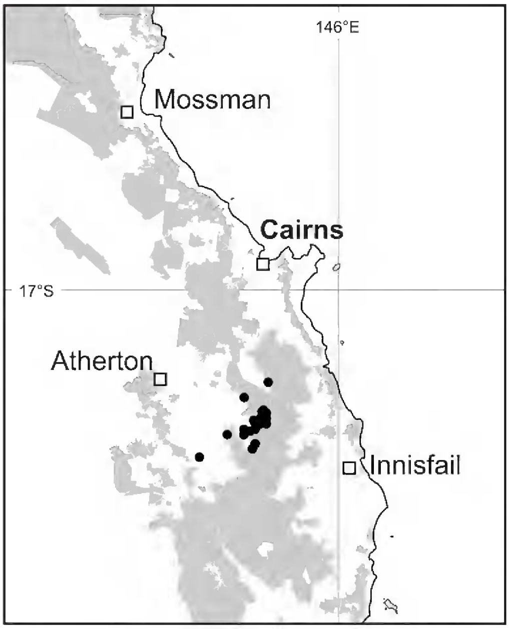
Symplocos sp. (Boonjie B.P.Hyland 2753); (Jessup 1994, 1997, 2002, 2007, 2010).

***Illustrations*:** Cooper & Cooper (2004: 538), under *Symplocos* sp. (Boonjee); Hyland *et al.* (2010), under *Symplocos* sp. (Boonjie B.P.Hyland 2753).

Shrub to 3 (–5) m. Shoots, cataphylls and young branchlets glabrous; cataphylls usually caducous. Leaves chartaceous; lamina narrowly obovate or narrowly oblanceolate, 4.5–11 cm long, 1–3 cm wide, acuminate at apex, acute or attenuate at base, glabrous; margins usually entire, slightly recurved; secondary veins mostly 5–7 pairs; petiole 3–7 mm long, glabrous. Inflorescence a solitary flower in axil of a leaf or cataphyll; the axis *c.* 1.5 mm long with up to 9 bracts or a fascicle with one open flower surrounded by several buds; lower bracts broadly ovate to depressed ovate, upper ones ovate to narrowly ovate, 3.5–5 mm long, persistent, sparsely appressed pubescent to nearly glabrous; margins denticulate, ciliate; bracteoles 2–3 mm long, similar to upper bracts. Calyx limb 4–5.5 mm long; lobes narrowly ovate, acute, sparsely puberulous; margin denticulate, ciliate; tip incurved. Petals narrowly ovate, acute or obtuse, 3–3.5 mm long, 1.5–1.7 mm wide, cream to white, glabrous. Stamens 35–40 in males, 25–30 in females, 0.8–3 mm long, filaments glabrous. Disc pilose. Style 3–3.5 mm long (*c.* 0.5 mm in males), with a few hairs at base, otherwise glabrous. Fruit oblong or ellipsoidal, *c.* 17 mm long and 3.5 mm wide, glabrous, blue. **Fig. 1D–F.**

***Additional selected specimens examined*: Queensland.** Cook District: E side of Mulgrave River, Goldsborough Valley, Jun 1995, *Hunter JH3704* (BRI); Gadgarra S.F., S of Butchers Creek, Jun 1995, *Hunter JH3904* (BRI); S.F.R. 310, Swipers L.A., E of Malanda, Aug 1963, *Hyland AFO/2753* (BRI); Swipers Flat, Wooroonooran N.P., Jul 1995, *Forster PIF17138 & Figg* (BRI); Boonjee L.A., near Bartle Frere track, Nov 1988, *Jessup GJM362 et al.* (BRI); Russell River, *Johnson s.n.* (MEL46567); Palmerston Track ridge, Feb 1995 *Hunter JH1158* (BRI); Breeden Property, Hughes Road, Topaz, Mar 1992, *Cooper & Cooper 221* (CNS); T.R. 1230, Bartle Frere, Boonjee L.A., Sep 1992, *Gray 5575* (CNS); S.F.R. 755, Bartle Frere, Gosschalk L.A., Nov 1991, *Hyland 14345* (CNS); R.926, Kauri Reserve, Dirran, Oct 1987, *Dansie 20166* (CNS); N.P.R. 904, along track between Coolamon Creek and Combo Creek, Oct 2000, *Ford AF2462* (BRI); Wooroonooran N.P., Combo Creek, Nov 1998, *Forster PIF23990 et al.* (BRI).

***Distribution and habitat*:** This species is endemic to the Wet Tropics of Queensland where it is known from notophyll and mesophyll vineforests mostly on the western side of Wooroonooran N.P., and nearby forest remnants (**Map 3**), on metamorphic or basalt substrates.



Map 3. Distribution of *Symplocos boonjee*

***Phenology*:** Flowers are recorded from June to February; fruit in July and August.

***Notes*:** Specimens of this species (e.g. *Hyland 2753*) were tentatively included in *Symplocos cyanocarpa* C.T.White in Nooteboom (1982).

***Etymology*:** The species epithet commemorates a botanically rich but loosely defined locality on the eastern edge of the Atherton Tableland known as Boonjee or Boonjie. For the sake of consistency the first alternative spelling is used as it has been used in the names *Syzygium boonjee* B.Hyland and *Bulbophyllum boonjee* B.Gray & D.L.Jones (= *Adelopetalum boonjee* (B.Gray & D.L.Jones) D.L.Jones & M.A.Clem.).

***Conservation status*:** *Symplocos boonjee* is only known from Wooroonooran N.P. At a few sites it has been recorded as common.

Additional collections and observations are required to determine its area of occupancy and population numbers.

4. Symplocos bullata Jessup **species nova** *S. paucistamineam* simulans sed foliis bullatis, marginibus recurvis, stylis longibus (2–2.5 mm, contra 1.2–1.8 mm) et fructibus majoribus (8–9 × 3.5–4 mm, contra 5–5.8 × 7.5–8 mm) differt. **Typus:** Queensland. Cook District: State Forest Reserve 143, North Mary Logging Area, 25 April 1982, *B.Gray 2543* (holo: BRI; iso: BRI, CNS).

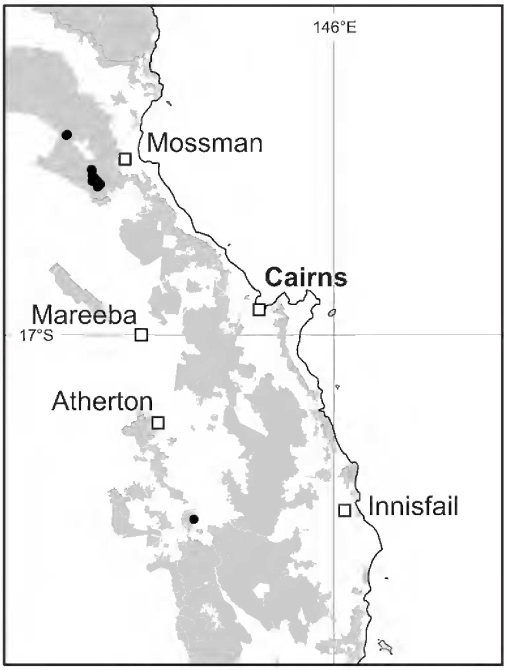
Symplocos sp. (North Mary B.Gray 2543); (Jessup 2002, 2007, 2010).

***Illustrations*:** Hyland *et al.* (2010), under *Symplocos* sp. (North Mary B.Gray 2543).

Dioecious tree to 15 m. Shoots and young branchlets yellowish brown or reddish-brown to dark brown villous, cataphylls rarely evident. Leaves thinly coriaceous or chartaceous; lamina lanceolate, elliptic, obovate or oblanceolate, 4–14 cm long, 1.2–5 cm wide, acuminate at apex, cuneate, acute or scarcely obtusely so or obtuse, truncate or rounded at base, mature leaves bullate between main veins, glabrescent above, pilose below; margins obscurely denticulate or entire, recurved; secondary veins mostly 7–12 pairs, usually depressed on upper surface; petiole 4–11 mm long, pilose. Inflorescences spicate, to 5 cm, pilose; bracts and bracteoles ovate, densely reddish-brown pilose or villous, persistent, bracts 1.8–2.5 mm long, bracteoles 1.3–1.5 mm long. Calyx limb 1.2–1.5 mm long; lobes ovate, 1–1.2 mm long, pubescent in middle near apex with reddish-brown hairs, sometimes glabrescent. Petals obovate, 3–3.5 mm long, 1–1.5 mm wide, cream to white, mostly glabrous. Hypanthium glabrous. Stamens (15–) 20–25 in males, 7–10 in females and apparently sterile, 1–2.5 mm long. Disc glabrous. Style 2–2.5 mm long, glabrous; females with peltate stigma. Fruit broadly ovoid or ampulliform 8–9 mm long, 7.5–8 mm wide, colour unknown. **Fig. 1G–I.**

***Additional selected specimens examined*: Queensland.** Cook District: Daintree N.P., NW of Black Mountain, May 1998, *Forster PIF22903 et al.* (BRI); Daintree N.P., near end of Mt Lewis road, Nov 1988, *Jessup et al. GJM155* (BRI); S.F.R.143 Riflemead, North Mary L.A., Jun 1995, *Gray 6226* (BRI); *loc. cit.*, Dec 1995, *Gray 6479* (CNS photo); S.F.R. 652, Mt Fisher, May 1975, *Hyland 3175RFK* (BRI, CNS).

***Distribution and habitat*:** Endemic to the Wet Tropics of Queensland where it occurs in the Mt Lewis to Mt Carbine Tableland area west of Mossman and with an outlier at Mt Fisher, south of Millaa Millaa (**Map 4**). Grows in montane microphyll and notophyll vineforests on granite substrates.



Map 4. Distribtution of *Symplocos bullata*

***Phenology*:** Flowers are recorded from April to June; fruit in December.

***Etymology*:** The specific epithet is derived from the Latin adjective *bullatus* (bullate, blistered or puckered) and refers to the appearance of the upper surface of the lamina between the veins.

***Conservation status*:** *Symplocos bullata* is only known from the localities cited above. Additional collections are required to determine its area of occupancy and population numbers.

5. Symplocos candelabrum Brand in Engl., *Pflanzenr.* 6: 39 (1901); *S. cochinchinensis* var. *candelabrum* (Brand) Noot., *Brunonia* 4: 323 (1982). **Type:** New South Wales. Lord Howe Island, April 1898, *J.H.Maiden s.n.* (holo: B [destroyed]; iso: BM, BRI).

***Illustration*:** Green (1994).

Tree to 13 m, usually much smaller. Shoots and young branchlets glabrous or glabrescent. Leaves thinly coriaceous; lamina elliptic or lanceolate, 6–16 cm long, 2–6 cm wide, acute to acuminate at apex, attenuate at base, glabrous; margins entire to remotely serrulate-denticulate near apex, more or less recurved near base; secondary veins mostly 8–11 pairs; petiole 20–30 mm long, glabrous. Inflorescence predominately racemose to 6 cm, glabrous or with few very sparse hairs; pedicels to 5 mm long; bracts and bracteoles triangular, ciliate; bracts 1–1.5 mm long, caducous before anthesis; bracteoles 0.8–1.5 mm long, often persisting a little longer than the bracts. Hypanthium glabrous; calyx limb 0.6–0.8 mm long; lobes broadly ovate, glabrous with ciliate margin. Petals obovate, mostly 6–7 mm long, 3–3.5 mm wide, white, glabrous. Stamens mostly 30–40, 5–6 mm long. Disc with a few hairs. Style 4–5 mm long, pubescent at base. Fruit mostly obovoid, 10–16 mm long, 7–10 mm wide, blue.

***Additional selected specimens examined*:** **New South Wales.** Lord Howe Island: Mt Gower walking track, Nov 2000, *Conn 4320* (BRI); Halfway to saddle from Erskines Creek on summit track, Nov 2000, *Le Cussan 1056* (BRI); *loc. cit.*, Feb 2004, *Le Cussan 1375* (BRI); Intermediate Hill track, Mar 2003, *Le Cussan 1280* (BRI).

***Distribution and habitat*:** Occurs only in submontane forest at the southern part of Lord Howe Island.

***Phenology*:** Flowers are recorded from March to June; Mature fruit in February.

***Notes*:** This species was included under *Symplocos cochinchinensis* var. *candelabrum* (C.T.White) Noot. (as *S. cochinchinensis* subsp. *thwaitesii* var. *candelabrum*) in Nooteboom (1982).

***Conservation status*:** *Symplocos candelabrum* is currently not listed under the EPBC Act despite its highly restricted distribution.

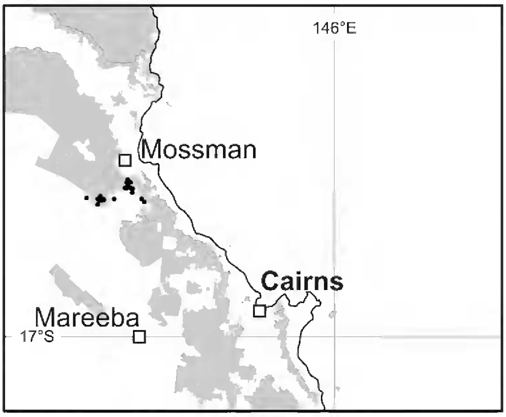
6. Symplocos crassiramifera Noot., *Leiden Bot. Ser.* 1: 186 (1975). **Type:** Queensland. Cook District: Devil Devil Creek, a few miles NE of Rumula and *c.* 8 miles [13.3km] SSW of Mossman, 1 September 1948, *L.S. Smith 3965* (holo: BRI; iso: L).

***Illustrations*:** Hyland *et al.* (2010).

Shrub or small tree to 8 m with few branches. Shoots and young branchlets with caducous cataphylls, pilose. Leaves coriaceous; lamina narrowly elliptic to narrowly oblanceolate, 20–41 cm long, 3.5–8.5 cm wide, acuminate at apex, acute or obtuse at base, glabrous above, pilose below; margins revolute, remotely denticulate to entire; secondary veins mostly 15–20 pairs; petiole 8–20 mm long, pilose. Inflorescences comprising clustered spicate axes to 15 cm, villous or pilose; bracts and bracteoles ovate, brown pubescent, persistent, bracts 2–2.5 mm long, bracteoles 1.7–2 mm long. Calyx limb 1.5–2 mm long, lobes broadly ovate or rounded, pubescent. Petals obovate, 4–4.5 mm long, 1.7–2 mm wide, pink, glabrous. Stamens *c.* 25, 3–4 mm long. Disc inconspicuous. Style 2.5–4 mm long, pubescent at base. Fruit ampulliform, 7–10 mm long, 4–5 mm wide, pink.

***Additional selected specimens examined*:** **Queensland.** Cook District: Little Mossman L.A., S.F.143, Jul 1994, *Forster PIF15513 et al.* (BRI); Rex Range, *c.* 1 km from Mossman–Julatten Road, on forest track *c.* 9 km NE of Julatten, Dec 1988, *Jessup 880 et al.* (BRI); Rex Highway, near Julatten, Apr 1962, *Webb & Tracey 5961* (BRI); The Gate, property of G. & S. Kurmond, 105 Salisbury Drive, Flin Creek, Julatten, Jan 2002, *Ford AF3260* (BRI); T.R. 66, Mt Lewis, May 1979, *Moriarty 2603* (BRI, CNS); 7 km along Mt Lewis Road, Mt Lewis F.R., Apr 2002, *Booth 3092 & Jensen* (BRI); T.R. 66, 8 km along Mt Lewis Road, Jun 1997, *Forster PIF21233 et al.* (BRI); Mt Lewis forestry road, SW of Mossman, May 1972, *Wrigley & Telford NQ140* (BRI, CANB); Rumula, Apr 1962, *McKee 9106* (BRI); Portion 203 Garioch, Jun 1973, *Hyland 6758* (BRI, CNS).

***Distribution and habitat*:** Endemic to the Wet Tropics of Queensland where it is known only from the vicinity of the headwaters of the South Mossman River to Mt Lewis (**Map 5**), in notophyll and mesophyll vineforests on granite and metamorphic substrates.



Map 5. Distribution of *Symplocos crassiramifera*

***Phenology*:** Flowers are recorded from May to July; fruit in September.

***Conservation status*:** *Symplocos crassiramifera* is currently listed as Vulnerable under the *NCA*.

7. Symplocos cyanocarpa C.T.White, *Proc. Roy. Soc. Queensland* 47: 69 (1936). **Type:** Queensland. Cook District: Mossman River, 4 February 1932, *L.J.Brass 2050* (holo: A, *n.v.*; iso: BRI, MEL).

Shrub or small tree to 5 m. Shoots and young branchlets pilose, glabrescent or glabrous, sometimes with pubescent cataphylls. Leaves chartaceous to coriaceous; lamina oblanceolate, narrowly obovate or elliptic, 8–23 cm long, 2.5–7 cm wide, mostly acuminate, sometimes acute or obtuse at apex, acute or attenuate at base, glabrous or with scattered hairs on midvein below; margins remotely serrate towards tip or entire; secondary veins 7–12(–15) pairs; petiole 3–10 mm long, glabrous or pilose. Inflorescence a fascicle of mostly 2–10 flowers, axillary or ramal; bracts and bracteoles ovate to triangular, sometimes denticulate, pubescent, persistent, bracts 1.5–1.7 mm long, bracteoles 1–1.2 mm long. Calyx limb 1.5–2 mm long; lobes ovate, often denticulate and ciliate, 1–1.4 mm long, pubescent. Petals oblong to obovate, 2.5–4 mm long, 1.4–1.8 mm wide, white or cream-pink, glabrous or with a few hairs, sometimes ciliolate. Stamens 15–30, 2.5–3.5 mm long, filaments pilose. Disc pilose. Style 2.5–3 mm long, shorter and without stigma in males, sparsely pilose. Fruit cylindrical to narrowly ellipsoidal, 15–25 mm long, 6–10 mm wide, glabrescent, blue to purple.

***Distribution and habitat*:** Endemic to the Wet Tropics of Queensland where it occurs from Big Tableland, north of Mt Finnigan, south to the Mossman River, in mesophyll and notophyll vine forest.

Two varieties are recognised.

Key to varieties

Young branchlets, petiole and lamina glabrous . . . . var. **cyanocarpa**
Young branchlets, petiole and midvein of lamina pilose below . . . . var. **pilosa**

7a. Symplocos cyanocarpa var. cyanocarpa

Shrub or small tree to 5 m. Shoots, young branchlets, petiole and lamina glabrous or nearly so. Bracts, bracteoles, and calyx appressed puberulous. **Fig. 2A–C.**

***Illustrations*:** Hyland *et al.* (2010).

***Additional selected specimens examined*:** **Queensland.** Cook District: Mt Finnigan, W slopes, Sep 1948, *Brass 20043* (BRI); Cedar Bay N.P., W slopes of Mt Finnigan, Oct 1999, *Forster PIF25014 & Booth* (BRI); Mt Misery, Jun 1992, *Forster PIF10751 et al.* (BRI); Daintree N.P., Cedar Bay section, Gap Creek, Nov 2000, *Forster PIF26464 et al.* (BRI); Cedar Bay N.P., Jul 1994, *Forster PIF15585 et al.* (BRI); N of Daintree River, on road to Cape Tribulation, Nov 1985, *Tucker 37* (BRI); Palm Road, 3 km W of Alexander Bay, Dec 2001, *Forster PIF27907 et al.* (BRI); Whyanbeel, Dec 1978, *Gray 1181* (BRI, L); *loc. cit.*, Dec 1978, *Gray 1187* (BRI); *c.* 2 km along Whyanbeel – Daintree track, from Whyanbeel Creek, Jan 1986, *Guymer 2060* (BRI); Near Cooper Creek, Aug 1987, *Sankowsky 639 & Sankowsky* (BRI); Mossman Gorge, W of Mossman, Jun 1972, *Wrigley & Telford NQ1137* (BRI).

***Distribution and habitat*:** Endemic to the Wet Tropics of Queensland where it occurs from the vicinity of Mt Finnigan to south of Mossman (**Map 6**) in mesophyll and notophyll vineforest on granitic and metamorphic derived soils.

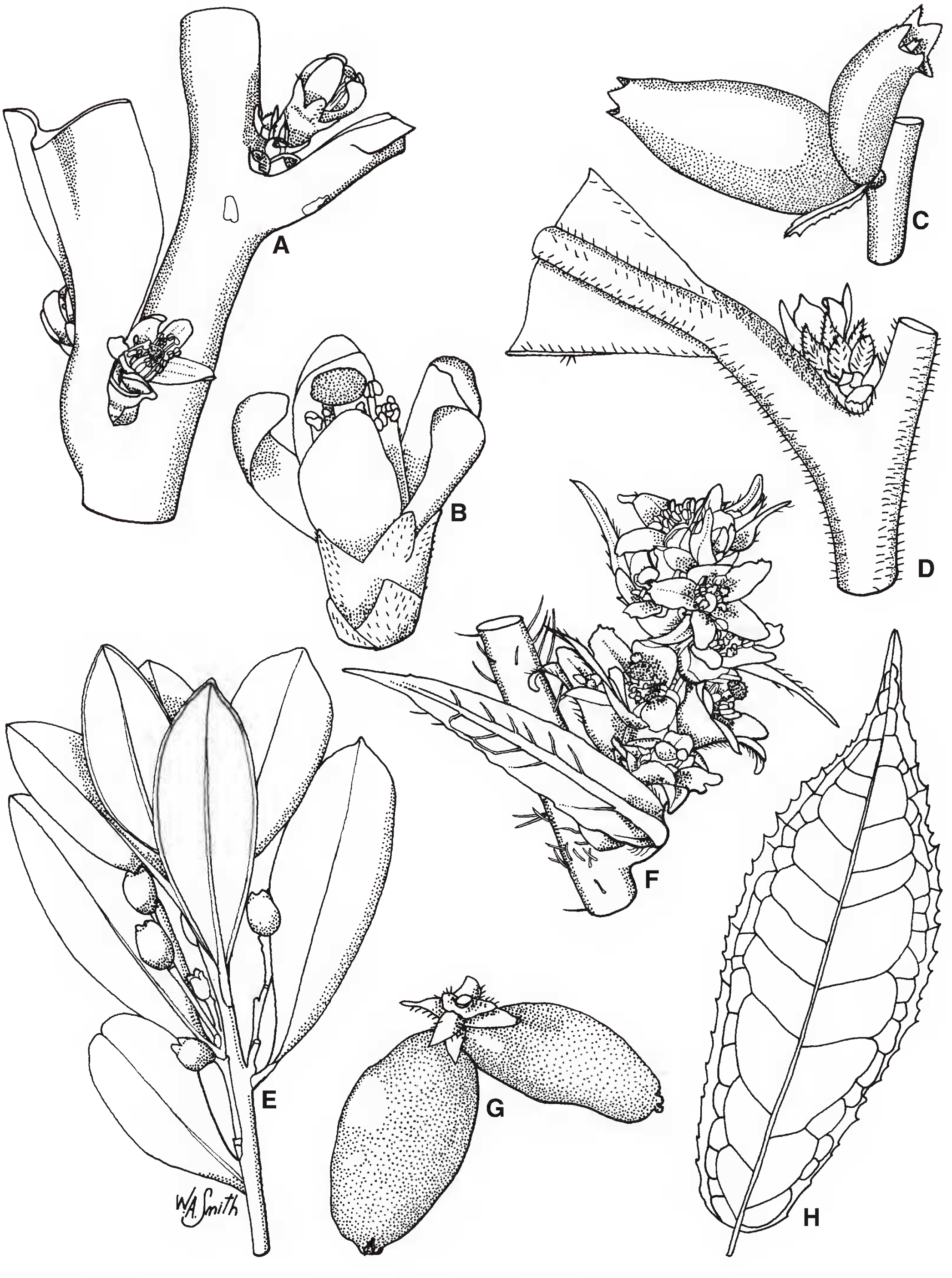
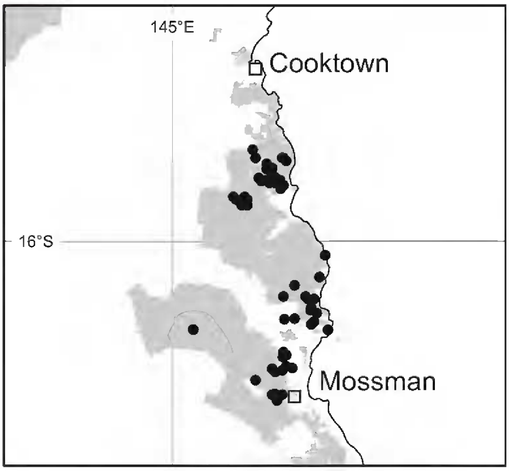


Fig. 2. ***Symplocos cyanocarpa*** var. ***cyanocarpa***. A. portion of stem with inflorescences and leaf base × 3. B. flower × 8. C. fruit × 2. A–C from *Forster PIF10751 et al.* (BRI). ***S. cyanocarpa*** var. ***pilosa***. D. inflorescence and leaf base × 4, *Hyland 10582* (BRI). ***S. glabra***. E. branchlet with fruit × 0.8, *Hyland 11798* (BRI). ***S. hayesii***. F. inflorescence with flowers × 4, *Hyland 14628* (CNS). G. fruit × 2, *Smith 10839* (BRI). H. leaf abaxial surface × 1, *Smith 10839* (BRI). Del. W.Smith.



Map 6. Distribution of *Symplocos cyanocarpa* var. *cyanocarpa*

***Phenology*:** Flowers are recorded from July to January; fruit from November to March.

***Conservation status*:** *Symplocos cyanocarpa* var. *cyanocarpa* occurs mostly in National Parks and other reserves throughout its range and is not considered to be threatened.

7b. Symplocos cyanocarpa var. **pilosa** Jessup **varietas nova**, differt a var. *cyanocarpa* ramulis juvenibus, petiolo et costa abaxialiter pilosis. **Typus:** Queensland. Cook District: Timber Reserve 146, Tableland Logging Area, 11 September 1980, *B.P.Hyland 10582* (holo: BRI; iso: CNS).

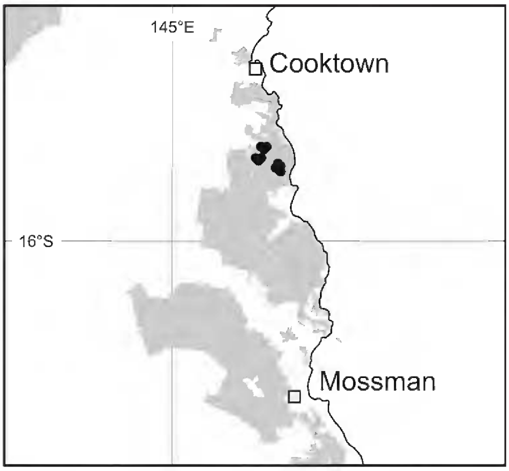
Symplocos sp. (Big Tableland B.P.Hyland 10582); (Jessup 1997, 2002, 2007, 2010).

***Illustrations*:** Hyland *et al.* (2010), under *Symplocos* sp. (Big Tableland B.P.Hyland 10582).

Shrub or small tree to 3 m. Shoots, young branchlets, petiole and main veins of leaves on underside pilose with scattered erect hairs, glabrous above. Bracts, bracteoles and calyx pilose with more or less erect hairs. **Fig. 2D.**

***Additional specimens examined*:** **Queensland.** Cook District: T.R. 146, Tableland L.A., Jul 1975, *Hyland 8324* (BRI, CNS); Hartley Creek at end of Mt Hartley track, Oct 1996, *Ford 1774* (BRI); Along track from Hartley Creek to Mt Hartley, Oct 1996, *Ford 1782* (BRI); Mt Hartley, western slopes, T.R. 165, Jul 1995, *Forster PIF17296 & Figg* (BRI).

***Distribution and habitat*:** Endemic to the Wet Tropics of Queensland where it occurs on Big Tableland and Mt Hartley, northwest of Cedar Bay (**Map 7**) in notophyll vineforest on granite substrates.



Map 7. Distribution of *Symplocos cyanocarpa* var. *pilosa*

***Phenology*:** Flowers are recorded in July, September and October and very immature fruit in October.

***Etymology*:** The varietal epithet is formed from the Latin word *pilosus* (covered with short, weak, thin hairs) and refers to the indumentum on the young branchlets, petiole and adaxial surface of the midvein.

***Conservation status*:** *Symplocos cyanocarpa* var. *pilosa* is only known from the localities cited above. Additional collections are required to determine its area of occupancy and population numbers.

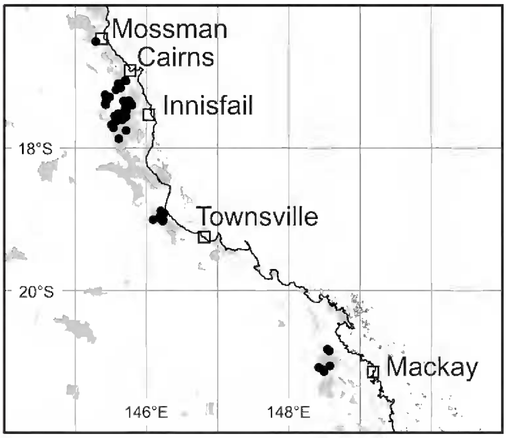
8. Symplocos gittinsii Jessup **nom. et stat. nov.**; *S. cochinchinensis* var. *gittonsii* Noot., *Leiden Bot. Ser.* 1: 162 (1975). **Type:** Queensland. North Kennedy District: Mt Spec Range, May 1962, *C.H.Gittins 494* (holo: BRI; iso: L).

***Illustrations*:** Nooteboom (1982: Fig. 11); Cooper & Cooper (2004: 537); Hyland *et al.* (2010), all under *Symplocos cochinchinensis* var. *gittonsii*

Tree to 30 m. Shoots and young branchlets glabrous; cataphylls glabrous and ciliate. Leaves coriaceous; lamina obovate, sometimes elliptic, 8–18 cm long, 3.5–9.5 cm wide, acuminate, acute or obtuse at apex, acute or attenuate at base, glabrous; margins entire, revolute; secondary veins mostly 7–11 pairs; petiole 10–35 mm long, glabrous. Inflorescence axes branched, to 13 cm long, spicate, sparsely appressed puberulous; bracts and bracteoles broadly or depressed ovate, glabrous with ciliate margin, persistent to after anthesis, sometimes to fruiting, bracts 0.8–1.5 mm long, bracteoles 0.7–1 mm long. Calyx limb 0.7–1.5 mm long, glabrous; lobes depressed obovate, mostly glabrous with ciliate margin. Petals broadly obovate, 4–6 mm long, 3.5–4.5 mm wide, white, glabrous. Stamens 60–70, 2.5–6 mm long. Disc slightly raised, 5-lobed, glabrous. Ovary 3-locular, with *c.* 3 ovules per locule. Style 4 mm long, glabrous. Fruit ellipsoidal or ovoid, 6–7 mm long, 4–5 mm wide, blue to black.

***Additional selected specimens examined*: Queensland.** Cook District: T.R. 30, Mt Lewis area, Oct 1967, *Hyland 1048* (BRI); Ridge between McKinnon & Wrights Creeks, southwest of Edmonton, Jun 1996, *Forster PIF19263 et al.* (BRI); S.F.R. 310, Gadgarra, Feb 1981, *Bragg s.n.* (BRI [AQ874875]); T.R. 1230, Boonjie L.A., May 1977, *Gray 533* (BRI, MEL); S.F.R. 310, Gadgarra, Windin L.A., May 1990, *Hyland 14017* (BRI); S.F.R. 310, Windin L.A., Jan 1978, *Gray 850* (BRI, MEL); Topaz to Boonjee Road, May 1987, *Starkey 74* (BRI); On Topaz Road, Dec 1985, *Sankowsky 459 & Sankowsky* (BRI); Topaz Road, Nov 1992, *Jessup 905* (BRI); Palmerston Highway, 1 km south-east of Beatrice River, Jan 1993, *Bean 5401* (BRI); Wooroonooran N.P., Palmerston section, Dec 1999, *Forster PIF25209* (BRI); S.F. 756, Mt Father Clancy, May 2000, *Forster PIF25726 & Booth* (BRI); Portion 297, Parish of Dirran, Apr 1984, *Gray 3992* (BRI, CNS). North Kennedy District: 4.5 km south along Culpa Road, S.F. 605 Koombooloomba, Culpa L.A., May 2002, *Forster PIF28705 & Booth* (BRI); Mt Spec near Paluma village, May 1985, *Jackes 14* (BRI); Paluma, May 1980, *Horton s.n.* (BRI [AQ343157]); Paluma, Sep 1990, *Cumming 10650* (BRI); Mt Spec N.P., Paluma, behind Rangers barracks, May 1989, *Fell DF1851* (BRI). South Kennedy District: S.F. 652 Cawley, near Mt Macartney, Jun 1995, *Forster PIF16714 & Tucker* (BRI); Clarke Range, 13.7km from Eungella township, Eungella N.P., Apr 1991, *Forster PIF8057 & McDonald* (BRI); Roadside *c.* 15 km N of Eungella township on Dalrymple Road, Nov 1989, *McDonald 4465* (BRI); Dalrymple Heights, Eungella Range, Fredrickson's Farm, May 1987, *Champion 227* (BRI).

***Distribution and habitat*:** Endemic to Queensland where it occurs from Mt Lewis south to Culpa L.A. in the Wet Tropics, then disjunct to Paluma and the Clarke Range near Eungella (**Map 8**). Grows in upland notophyll or mesophyll vine forest on diverse substrates (basalts, granites, metamorphics, rhyolites).



Map 8. Distribution of *Symplocos gittinsii*

***Phenology*:** Flowers are recorded in April and May; fruit from November to January.

***Notes*:** This species was treated as *Symplocos cochinchinensis* var. *gittonsii* Noot. (as *S. cochinchinensis* subsp. *thwaitesii* var. *gittonsii*) in Nooteboom (1982).

***Etymology*:** The name commemorates Clifford Halliday Gittins (1904–1995), an amateur botanical collector of mostly Queensland plant specimens.

***Conservation status*:** *Symplocos gittinsii* occurs in several National Parks and other reserves throughout its range and is not considered to be threatened.

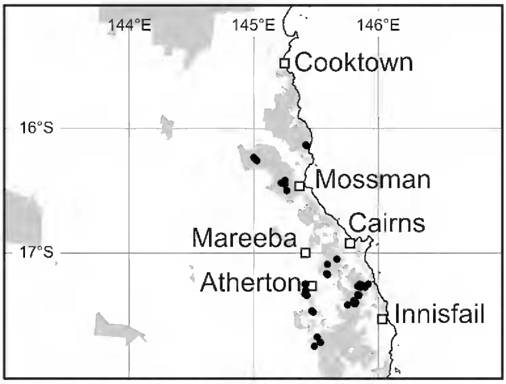
9. Symplocos glabra Jessup nom. et stat. nov.; *S. cochinchinensis* var. *glaberrima* Noot., *Brunonia* 4: 319–320 (1982). Type: Queensland. Cook District: State Forest Reserve 194, Compartment 54, 17 March 1971, *G.C. Stocker 622* (holo: L; iso: BRI, CNS, MEL).

***Illustrations*:** Nooteboom (1982, Fig. 11); Hyland *et al.* (2010), both under *Symplocos cochinchinensis* var. *glaberrima*.

Small tree to 9 m. Shoots and young branchlets glabrous. Leaves coriaceous; lamina oblanceolate or narrowly obovate, rarely elliptic, 7–15 cm long, 2–7 cm wide, acuminate, acute or obtuse at apex, acute or attenuate at base, glabrous; margins entire, revolute; secondary veins mostly 8–12 pairs; petiole 3–10 mm long, glabrous. Inflorescence axes 2 or 3, racemose, to 3 cm long, glabrous, branching near base, sometimes single; pedicels 0.2–2 mm long; bracts and bracteoles glabrous but ciliate, caducous or persistent to anthesis, bracts broadly ovate or oblong, 1.2–2.5 mm long, bracteoles ovate, 0.7–1.2 mm long. Calyx limb 1.2–1.5 mm long, glabrous; lobes depressed obovate, glabrous with ciliate margin. Petals narrowly obovate, 4.5–6 mm long, 2–3 mm wide, cream to white, glabrous. Stamens mostly 30–50, 2–5 mm long. Disc 5-lobed, sparsely puberulous. Style 4.5–5 mm long, glabrous. Fruit subglobose or ellipsoidal, 8–11 mm long, (5–) 8–10 mm wide, blue-black to purple-black. **Fig. 2E.**

***Additional selected specimens examined*: Queensland.** Cook District: V.C.L. Noah, Mt Hemmant, Oct 1975, *Hyland RFK3339* (BRI); Mt Windsor F.R, *c.* 5.7 km from Spencer Creek Forestry barracks, Jun 2004, *Ford 4341 & Hewett* (BRI); S.F.R. 144 Whypalla, Bower Bird L.A., Dec 1987, *Hyland 13454* (BRI); Mt Spurgeon, W of Mossman, Sep 1936, *White 10557* (BRI); Mt Bellenden Ker, Jun 1969, *Smith 14682B* (BRI); Wooroonooran N.P., Mt Bellenden Ker summit area, Dec 2000, *Forster PIF26510 et al.* (BRI); *loc. cit.*, Dec 2001, *Forster PIF27945 et al.* (BRI); Mt Bellenden Ker, *c.* 0.5 miles [0.8 km] SW of centre peak, Jun 1969, *Smith 14638 & 14638a* (BRI); Summit of Centre Peak, Bellenden Ker, Nov 1972, *Webb & Tracey 11920* (BRI); S.F.R. 194 Herberton, *c.* 10 miles [16 km] S of Atherton, May 1964, *Rudder s.n.* (BRI [AQ84400], L); Bellenden Ker, Jan 1923, *White s.n.* (BRI [AQ84393]); S.F.R. 310 Bellenden Ker Range, Jan 1980, *Hyland 10205* (BRI); Mt Bellenden Ker, Feb 1982, *Irvine 2210* (BRI, CNS); Mt Bellenden Ker, Dec 2000, *Jago 5779 & Forster* (BRI); Summit of Mt Bellenden Ker, Aug 1971, *Hyland 5312* (BRI); S.F.R. 755 Gosschalk L.A., Jun 1982, *Hyland 11798* (BRI); 100 m W of summit of NW peak of Bartle Frere, Jul 1995, *Hunter JH4461* (BRI); Wooroonooran N.P., summit of South Peak, Oct 1997, *Forster PIF21771 et al.* (BRI); Mt Bartle Frere, Jun 1961, *Martin & Hyland AFO/1890* (BRI); S.F.R. 194 Barron, Jan 1983, *Gray 2909* (BRI); S.F.R. 251, Ravenshoe – Tully Falls Road, Aug 1968, *Hyland 1737* (BRI).

***Distribution and habitat*:** Endemic to the Wet Tropics of Queensland where it occurs at Mt Hemmant, Mt Windsor Tableland, Mt Carbine Tableland, on the Lamb Range, Bellenden Ker, Cardwell and Herberton Ranges (**Map 9**) in simple to complex microphyll and notophyll vineforests on granites (upper montane localities) and rhyolites.



Map 9. Distribution of *Symplocos glabra*

***Phenology*:** Flowers are recorded from December to May; fruit from December to March.

***Note*:** The superlative epithet ‘glaberrima’ is not available for use at the rank of species. This species was treated as *Symplocos cochinchinensis* var. *glaberrima* Noot. (as *S. cochinchinensis* subsp. *thwaitesii* var. *glaberrima*) in Nooteboom (1982).

***Conservation status*:** *Symplocos glabra* occurs in several National Parks and other reserves in the Wet Tropics and is not considered to be threatened.

***Etymology*:** The specific epithet is derived from the Latin adjective *glaber* (glabrous) and refers to the lack of indumentum on all parts of the plant.

10. Symplocos graniticola Jessup, *Austrobaileya* 4: 9 (1993) **Type:** Queensland. Cook District: Mt Lewis, 24 December 1986, *G. Sankowsky 598 & N. Sankowsky* (holo: BRI).

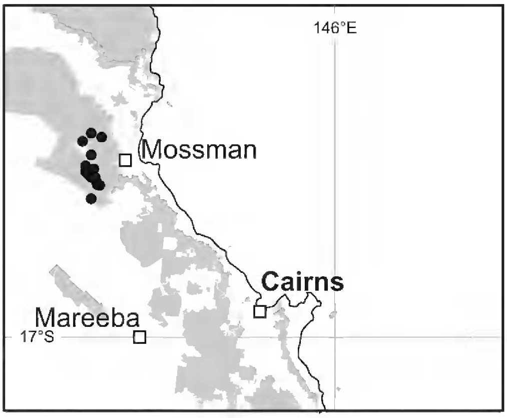
Symplocos sp. ‘Mt Lewis’; (Thomas & McDonald 1989).

***Illustrations*:** Jessup (1993: 10); Hyland *et al.* (2010).

Shrub to 3 m. Shoots and cataphylls with very sparse appressed hairs, glabrescent; cataphylls caducous. Twigs glabrous. Leaves coriaceous; lamina narrowly obovate or narrowly oblanceolate, obtuse or shortly acuminate, 9–23 cm long, 2–7.5 cm wide, glabrous; margins entire, recurved, sometimes remotely serrulate or denticulate, acute or attenuate at base; secondary veins mostly 6–12 pairs; petiole 8–20 mm long, glabrous. Inflorescence axes clustered, spicate, to 1.5 cm, puberulous; bracts and bracteoles ovate, slightly keeled, sometimes denticulate, pubescent, persistent, bracts 1.2–1.5 mm long, bracteoles 1–1.3 mm long. Calyx limb tube 1–1.3 mm long, glabrous; limb 1–1.2 mm long; lobes ovate or depressed ovate, 0.8–1 mm long, sparsely puberulous to nearly glabrous and with a ciliate margin. Petals oblong to obovate, 2.5–3.5 mm long, 1.5–2 mm wide, white, glabrous. Stamens 25–30, 2.5–4 mm long, filaments glabrous. Disc pilose. Style 2.5 mm long, pilose. Fruit ovoid or ellipsoid, 10–18 mm long, 6–12 mm wide, black.

***Additional selected specimens examined*:** **Queensland**. Cook District: Platypus Creek, Jan 1936, *Flecker 1216a* (CNS); Pinnacle Rock track, Jun 1992, *Forster PIF10716 et al.* (BRI); North Mary L.A., S.F. 143, 31.5 km along Mt Lewis road, Jun 1995, *Forster PIF16774A* (BRI); S.F.R. 143, South Mary L.A., May 1976, *Hyland 8773* (BRI, CNS); 32.6 km along Mt Lewis Road from Mossman – Mt Molloy Road, Dec 1989, *Jessup GJD3359 et al.* (BRI). S.F.R. 143, Kanawarra, Carbine Tableland, Nov 1995, *Gray 6400* (BRI); Mt Lewis F.R., off Mt Lewis Road, Jan 2008, *Ford AF5188 et al.* (BRI).

***Distribution and habitat*:** This species is endemic to the Wet Tropics of Queensland where it is known from Mt Spurgeon to Mt Lewis, Platypus Creek and Pinnacle Rock near Mossman (**Map 10**). It grows in simple microphyll and notophyll vineforests on granite or granodiorite substrates.



Map 10. Distribution of *Symplocos graniticola*

***Phenology*:** Flowers are recorded from December to May; green fruit from June to September, mature fruit in November.

***Conservation status*:** *Symplocos graniticola* is currently listed as Vulnerable under the *NCA*.

11. Symplocos harroldii Jessup, *Austrobaileya* 4: 7 (1993). **Type:** Queensland. Moreton District: Moggill State Forest, just downstream of road crossing Pullen Creek, 16 November 1980, *L.W.Jessup 268* (holo: BRI; iso: K, NSW).

Symplocos sp. 1.; Stanley & Ross (1986).

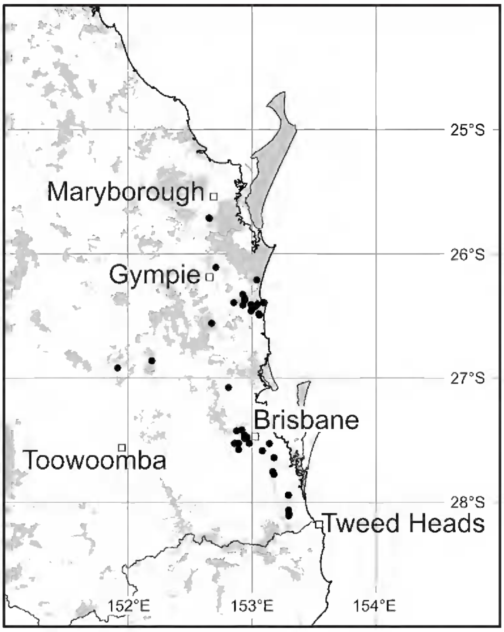
***Illustrations*:** Jessup (1993: 8); Leiper *et al.* (2008: 336).

Shrub or small tree to 6 m. Shoots and twigs pilose. Leaves coriaceous; lamina narrowly obovate or oblanceolate, 3–10 cm long, 0.8–3.5 cm wide, acuminate at apex, acute at base, glabrous or with a few hairs on underside, particularly on midvein; margins denticulate to serrate towards tip; secondary veins mostly 6–12 pairs; petiole 3–4 mm long, usually with scattered hairs. Inflorescence racemose, to 2 cm, puberulous; pedicels 0.2–2 mm long; bracts and bracteoles ciliate, semi-persistent, bracts broadly triangular, 0.7–1 mm long, bracteoles triangular, 0.3–0.4 mm long. Hypanthium glabrous. Calyx lobes broadly ovate, 0.5–0.7 mm long, glabrous, often with a ciliate margin. Petals obovate to oblong, 3–4 mm long, 2–2.5 mm wide, white, glabrous. Stamens 30–40, 1.8–5 mm long. Disc puberulous. Ovary 3-locular with up to 4 ovules per locule. Style 3.5–4 mm long, glabrous, dilated at stigma. Fruit narrowly ovoid or ellipsoid, 8–10 mm long, 6–7 mm wide, red.

***Additional selected specimens examined*:** **Queensland.** Wide Bay District: Tinana Creek, 7 km E Tiaro, Dec 1992, *Forster PIF12503 & Smyrell* (BRI); Tinana Creek, 7 km ENE of Tiaro, Mar 1992, *Smyrell s.n.* (BRI [AQ541786]); S.F. 502, Veteran L.A., Gympie, Sep 1992, *Thomas 8 & Barry* (BRI); 1 km ENE of Timberwah [Tinbeerwah] Hall, junction forestry road & tributary of Wooroi Creek, S.F. 959, Sep 1992, *Thomas 1 & Barry* (BRI); Gum Tree Drive off Cooroy – Tewantin Road, Sep 1992, *Thomas 5 & Barry* (BRI); Noosa N.P., off Viewland Drive, Jan 1993, *Thomas & Gayle s.n.* (BRI [AQ636338]); Panorama Drive via Duke Road, 8 km SE of Cooroy, Apr 1993, *Bean 5928* (BRI); N of Ringtail

Creek Road, Noosa Shire, Portion 8V, near S.F. 997, Oct 1994, *Thomas 102* (BRI); Noosa Shire hinterland N of Collwood Road, near Lake McDonald, Lot 3 Rp 800331 Parish of Tewantin, Sep 1995, *Thomas 33* (BRI); Compartment 1, Ringtail S.F., NE of Pomona, Sep 1997, *Bean 12412* (BRI); Doonan Wetland Conservation Area, Jan 2007, *Thomas MS112* (BRI); Maroochy Shire Bushland Conservation Reserve, Doonan Creek East (BCR), Jul 2007, *Thomas MS139* (BRI); Near Doonan Creek, Feb 2002, *Thomas 420M* (BRI). MORETON DISTRICT: 650 Campbells Pocket Road, Caboolture, Jan 2006, *Weber s.n.* (BRI [AQ735727]); 0.5 km SW of McAfees Lookout, S.F. 309, Feb 1991, *Forster PIF7790 & Bird* (BRI); Dillon Road, The Gap *c.* 0.5 km from intersection with Payne Road, Jul 1999, *Harris WKH124 & Thompson* (BRI); Greenford Street, Chapel Hill, Sep 1999, *Stephens s.n.* (BRI [AQ664972]); Cubberla Creek, Fig Tree Pocket, Sep 1998, *Stephens 2* (BRI); Daisy Hill S.F., Logan City, Dec 1993, *Thompson MOR323* (BRI); Hinze Dam, Mar 2007, *Jinks s.n.* (BRI [AQ784176]); Hinze Dam, *c.* 3.5 km SW of Mudgeeraba, Apr 2007, *Jinks D13A* (BRI).

***Distribution and habitat*:** This species is endemic to southeast Queensland. Collections of this species made since it was described in 1993 have extended the known range from Tinana Creek near Tiaro to the Hinze Dam near Mudgeeraba (**Map 11**).



Map 11. Distribution of *Symplocos haroldii*

***Phenology*:** Flowers are recorded from September to November; fruit in January.

***Note*:** The phrase in the description in Jessup (1993) stated 'peduncles 0.2–2 mm long'; this should have read 'pedicels 0.2–2 mm long'.

***Conservation status*:** *Symplocos harroldii* is currently listed as Near Threatened under the *NCA*.

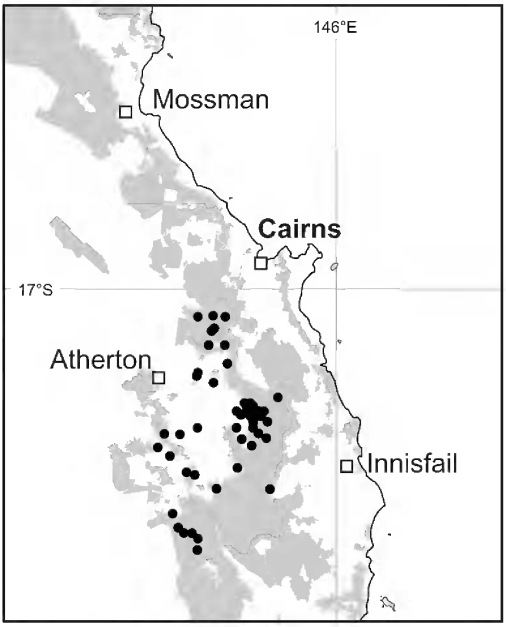
12. Symplocos hayesii C.T.White & Francis, *Proc. Roy. Soc. Queensland* 33: 158, t.2 (1921). **Type:** Queensland. COOK DISTRICT: Glenallan [Glen Allyn], Malanda, *s.dat., H.C.Hayes* (holo: BRI [AQ23234]).

***Illustrations*:** Cooper & Cooper (2004: 538); Hyland *et al.* (2010).

Shrub or small tree to 2 m. Shoots and young branchlets with persistent cataphylls, pilose. Leaves chartaceous; lamina narrowly ovate or narrowly obovate or elliptic, 6–12 cm long, 2.5–5.5 cm wide, acuminate at tip, rounded or cordate at base, glabrous except midvein on underside; margins serrate; secondary veins mostly 7–10 pairs; petiole 3–7 mm long, pilose. Inflorescence spicate, to 1.5 cm, or a fascicle, pilose; bracts and bracteoles sparsely pilose and ciliate, persistent, bracts ovate to narrowly triangular, 3–9 mm long, bracteoles ovate, 2–3 mm long. Calyx limb 1–1.5 mm long, glabrous; lobes ovate, acute, glabrous or with a few hairs, margin often ciliate. Petals ovate or oblong, denticulate, 2.2–2.5 mm long, white, glabrous. Stamens mostly 12–15, as long as petals in males, shorter in females. Disc pilose. Style 1.5–2 mm long in females, glabrous, stigma peltate. Fruit narrowly ovoid to ellipsoidal, usually curved, 15–20 mm long, 3.5–5 mm wide; blue to black, mesocarp thin, fleshy; endocarp smooth; seed 1. **Fig. 2F–H.**

***Additional selected specimens examined*: Queensland.** COOK DISTRICT: S.F. 185 Danbulla, 1 km N of Hoop Pine Triangle on C road, Jul 1994, *Forster PIF15609 et al.* (BRI); Danbulla, 12 miles [19.3 km] NE of Atherton, Jun 1949, *Smith 4181* (BRI); Yungaburra, near Lake Barrine, *Blake 9602* (BRI, CANB); near Lamond's Hill, 7.5 miles [12 km] SE of Malanda, Sep 1959, *Smith 10839* (BRI); S.F.R. 310, Gadgarra, Boonjee L.A., Jan 1993, *Hyland 14628* (CNS); T.R. 1230, Boonjee L.A., *Gray 1246* (BRI); S.F. 756, Mt Father Clancy, May 2000, *Forster PIF25720 & Booth* (BRI); Vacant Crown Land, Bartle Frere, E of Glen Allyn Trig., *Webb & Tracey 5795* (BRI). NORTH KENNEDY DISTRICT: tributary of Chunum Creek, May 2005, *Wannan 3986 & Sinclair* (BRI); Tableland L.A., 0.5 km S of Koolmoon Creek near junction of Ebony Road and Tully Falls Road, 6 km NW of Tully Falls, Oct 1998, *Jessup GJM2670 et al.* (BRI).

***Distribution and habitat*:** Endemic to the Wet Tropics of Queensland where it occurs from Tinaroo Range to Koolmoon Creek, southeast of Ravenshoe (**Map 12**). Grows in mesophyll and notophyll vineforests on substrates derived from basalts, granites and metamorphics.



Map 12. Distribution of *Symplocos hayesii*

***Phenology*:** Flowers are recorded from December to February; fruit from May to September.

***Conservation status*:** *Symplocos hayesii* occurs in several National Parks and other reserves on the Atherton Tableland is not considered to be threatened.

13. Symplocos hylandii Noot., *Brunonia* 4: 323 (1982). **Type:** Queensland. Cook District: State Forest Reserve 755 Boonjee, 21 March 1968, *B.Hyland RFK1395* (holo: CNS).

***Illustrations*:** Hyland *et al.* (2010).

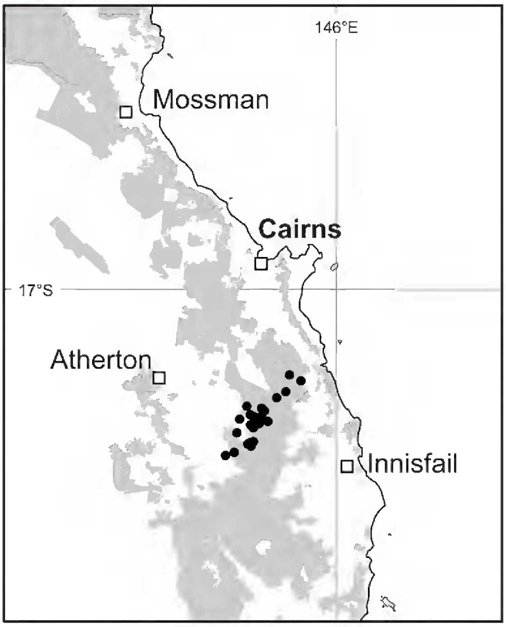
Shrub or small tree to 3 m. Shoots and young branchlets with persistent cataphylls, pilose. Leaves coriaceous; lamina narrowly obovate, 10–16 cm long, 1.7–3.5 cm wide, often bullate and brittle, acuminate at apex, acute at base, glabrous or with a few hairs on underside, particularly midvein; margins serrate; secondary veins mostly 5–12 pairs, raised below, sunken above; petiole 3–5 mm long, pilose. Inflorescence spicate, to 1.5 cm, pilose; bracts and bracteoles ovate, sparsely pilose and ciliate, persistent, bracts, *c.* 2 mm long, bracteoles, *c.* 1 mm long. Calyx limb 1.3–1.7 mm long, glabrous; lobes ovate or broadly oblong, puberulous or nearly glabrous, margins entire or minutely denticulate. Petals ovate or oblong, *c.* 3 mm long, white, glabrous. Stamens 10–15. Disc pulvinate, glabrous. Fruit ampulliform to ovoid, (7–) 10–12 mm long, 8–9 mm wide, blue, mesocarp thin, endocarp shallowly grooved; seed 1. **Fig. 3A,B.**

***Additional selected specimens examined*:** **Queensland.** Cook District: Mt Bellenden Ker, *c.* 7/8 mile [1.5 km] SE of centre peak, Jun 1969, *Smith 14717* (BRI); East Mulgrave River Falls, May 2002, *Jago 6212* (BRI); T.R. 1230, Stockwellia Track, 4.9 km from Lamins Hill turnoff (headwaters of Russell River), Aug 1989, *Bostock 912 & Guymer* (BRI); Swipers Flat, Wooroonooran N.P., Jul 1995, *Forster PIF17136 & Figg* (BRI); Wooroonooran N.P., track to Chuck Lunga Creek, E of Boonjee, Jun 1996, *Forster PIF19284 & Tucker* (BRI); Wooroonooran N.P., lower reaches of Russell River Track, Jan 2007, *Ford AF4913 & Metcalfe* (BRI); N.P.R. 904 Wooroonooran, Coolamon Creek, Oct 2001, *Ford AF3047 et al.* (BRI); Coolamon Creek, end of Towalla Road, Wooroonooran N.P., Oct 2001, *Cooper WWC1606* (BRI).

***Distribution and habitat*:** This species is endemic to the Wet Tropics of Queensland where it occurs from Mt Bellenden Ker to near Millaa Millaa (**Map 13**) mostly in mesophyll vineforests on substrates derived from granites and metamorphics.

***Phenology*:** Flowers are recorded in May; fruit from October to January.

***Conservation status*:** *Symplocos hylandii* is located mostly in Wooroonooran N.P. and is not considered to be threatened.



Map 13. Distribution of *Symplocos hylandii*

14. Symplocos oresbia Jessup species nova

S. wooroonooran simulans sed innovationibus et axibus inflorescentiarum glabris, bracteis et bracteolis ante anthesin caducis, petalis 2–2.5 mm longis (non 4–5 mm) et 1–1.3 mm latis (non 1.4–2.5), staminibus paucioribus (16–19 non 30–35), stylis brevioribus (1.5–1.8 mm non 3–3.5 mm) et fructibus amplissimus (10–15 × 7–9 mm non 5.8–6.3 × 4–5.5 mm) differt. **Typus:** Queensland. Cook District: Summit area of Thornton Peak, 12 November 1973, *T.G.Hartley 14045* (holo: BRI; iso: CANB).

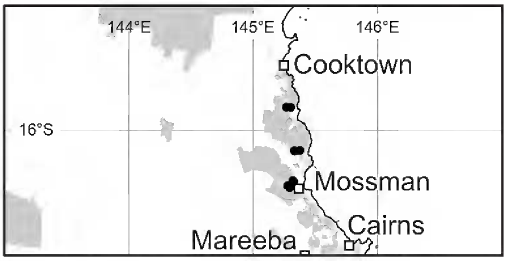
Symplocos sp. (Mt Finnigan L.J.Brass 20129); (Jessup 1994, 1997, 2002, 2007, 2010).

***Illustrations*:** Hyland *et al.* (2010), under *Symplocos* sp. (Mt Finnigan L.J.Brass 20129).

Shrub or small tree to 8 m. Shoots and young branchlets glabrous. Leaves coriaceous; lamina elliptic, 3–8 cm long, 1–3 cm wide, acuminate at apex, acute or attenuate at base, glabrous; margins entire, revolute; secondary veins mostly 7–9 pairs; petiole 3–7(–12) mm long, glabrous. Inflorescence axes 2 or 3, racemose, to 3 cm long, glabrous, branching near base, sometimes single; pedicels 0–0.2 mm long, bracts broadly ovate, 1–1.2 mm long, bracteoles ovate, 0.5–0.6 mm long, glabrous or ciliate, caducous before anthesis; pedicel 0.2–1.5 mm long. Calyx limb 1–1.5 mm long, lobes depressed ovate or rounded, 0.5–0.7 mm long, glabrous with ciliate margin. Petals obovate, 2–2.5 mm long, 1–1.3 mm wide, rounded, ?white, glabrous. Stamens 16–19; filaments glabrous. Disc glabrous. Style 1.5–1.8 mm long, glabrous; stigma indistinct. Fruit ampulliform, 7.8–8.5 mm long, 4.6–5.5 mm wide, colour unknown. **Fig. 3C,D.**

***Additional selected specimens examined*:** **Queensland.** Cook District: Mt Finnigan, Apr 1948, *Brass 20129* (BRI, CANB); Cedar Bay N.P., Mt Finnigan summit area, campsite on Horans Creek, Oct 1999, *Forster PIF25035 & Booth* (BRI); Summit of Devils Thumb, Mossman Gorge N.P., Apr 1986, *Godwin C3093* (BRI); Pinnacle Rock Track, Whyanbeel, Feb 1996, *Gray 6566* (BRI); Mossman Bluff, about 10 km W of Mossman, Dec 1988, *Fell DF1686* (BRI).

***Distribution and habitat*:** This species is endemic to the Wet Tropics of Queensland where it occurs from Mt Finnigan to Mossman Bluff (**Map 14**) in exposed montane rainforest (microphyll to nanophyll vineforests and vinethickets) on substrates derived from granite.



Map 14. Distribution of *Symplocos oresbia*

***Phenology*:** Flowers are recorded from February to April; fruit from December to January.

***Notes*:** Specimens of this species (e.g. *Brass 20129*) were included under *Symplocos cochinchinensis* subsp. *thwaitesii* var. *montana* in Nooteboom (1982).

***Conservation status*:** *Symplocos oresbia* (as *Symplocos* sp. (Mt Finnigan L.J.Brass 20129)) is currently listed as Near Threatened under the *NCA*.

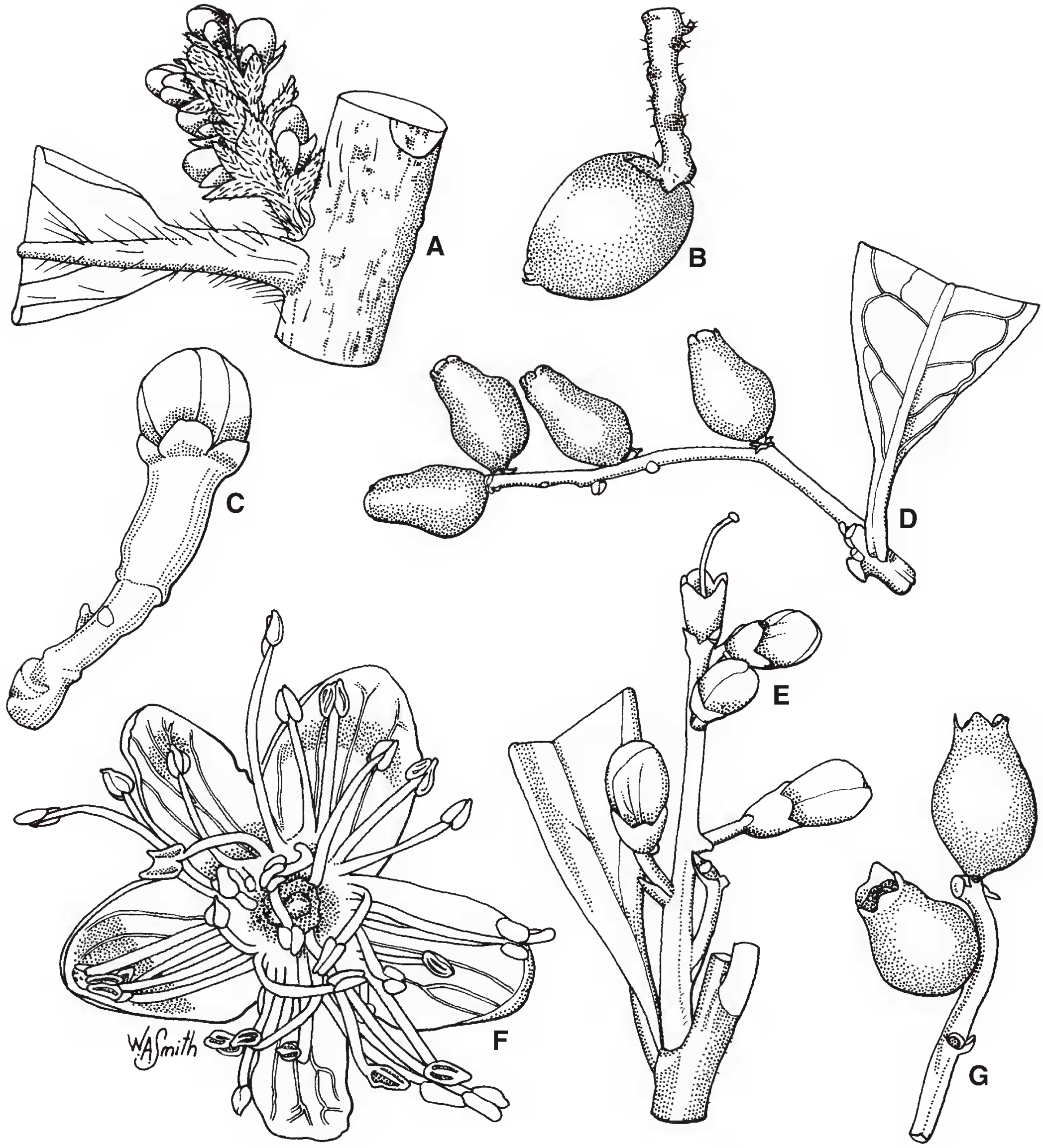


Fig. 3. ***Symplocos hylandii***. A. node with leaf base and budding inflorescence × 4, *Jago 6212* (BRI). B. fruit × 2, *Ford AF4913 & Metcalfe* (BRI). ***S. oresbia***. C. flower bud × 8, *Godwin C3093* (BRI). D. leaf base and inflorescence with fruit × 2, *Hartley 14045* (BRI). ***S. wooroonooran***. E. node with leaf base and inflorescence with buds and flowers × 3, *Forster PIF21767 et al.* (BRI). F. Flower × 6, *Forster PIF21767 et al.* (BRI). G. fruit × 3, *Hyland 5775* (BRI). Del. W.Smith.

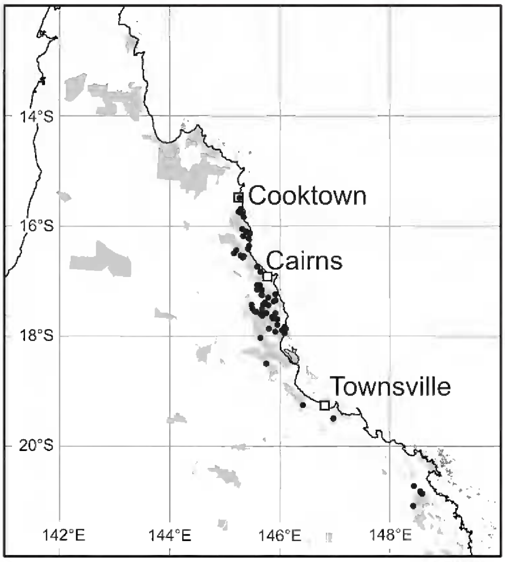
15. Symplocos paucistaminea F.Muell. & F.M.Bailey ex F.M.Bailey, *Syn. Queensland Fl., Supp.* 3: 46 (1890). **Type:** Queensland. Cook District: Harvey's Creek, in 1889 (Bellenden Ker Expedition), *F.M. Bailey s.n.* (holo: BRI [AQ23235]; iso: BM, K, L, MEL46497).

***Illustrations*:** Cooper & Cooper (2004: 538); Hyland *et al.* (2010).

Dioecious shrub or tree to 18 m. Shoots and young branchlets reddish-brown to dark brown pilose, cataphylls rarely evident. Leaves thinly coriaceous or chartaceous; lamina narrowly obovate, oblanceolate or elliptic, 5–22 cm long, 2–8.5 cm wide, acuminate at apex, acutely or obtusely cuneate or rounded at base, glabrescent above, pilose below, slightly glossy; margins serrulate and denticulate; secondary veins mostly 7–12 pairs, depressed, flush or indistinct on upper surface; petiole 4–12 mm long, pilose. Inflorescences clustered or not, spicate, to 5 cm, pilose; bracts and bracteoles ovate, reddish-brown pilose or villous, persistent, bracts 1.5–2.5 mm long, bracteoles 1.2–1.5 mm long. Calyx limb 1.2–1.5 mm long; lobes narrowly ovate or oblong, 1–1.2 mm long, glabrous or sparsely pubescent towards apex. Petals obovate, 2.5–3.5 mm long, 1.3–1.5 mm wide, cream to white, mostly glabrous. Stamens 15–20 in males, 7–10 in females and apparently sterile, 1–2.5 mm long. Disc glabrous. Style 1.2–1.8 mm long, glabrous; females with peltate stigma. Fruit ampulliform (when dry), globular when fresh, 5–5.8 mm long, 3.5–4 mm wide, dark blue to purple.

***Additional selected specimens examined*: Queensland.** Cook District: Mt Cook, Aug 1985, *Scarth-Johnson 1641A* (BRI); Gap Creek, T.R. 146, Fritz L.A., Jul 1973, *Stocker 997* (BRI); Cooper Creek, Cape Tribulation Area, Aug 1996, *Telford 12207* (BRI); V.C.L. Noah, Jun 1975, *Hyland 8291* (BRI); Portion 188, Alexandra, Palm Road, Jun 1985, *Gray 4074* (BRI); Baileys Creek area, *c.* 0.2 miles [0.3 km] E of sawmill, *c* .7.5 miles [12 km] ENE of Daintree, Oct 1962, *Smith 11516* (BRI); Mt Spurgeon, Apr 1968, *Hyland RFK1508* (BRI); Nissen Creek, Mt Perseverance Road, Jul 1995, *Forster PIF17169 & Figg* (BRI); Churchill Creek, Churchill L.A., S.F. 143, Jul 1995, *Forster PIF17204 & Figg* (BRI); Churchill Creek, S.F. 143, Churchill L.A., Nov 1998, *Forster PIF24008 et al.* (BRI); F.R. 185, Kalorama L.A. near Danbulla, Jun 1961, *Hyland 2047* (BRI); T.R. 1230, Boonjie L.A., May 1977, *Gray 526* (BRI); Wooroonooran N.P., Palmerston section, South Johnston Forestry Track., May 2005, *Forster PIF30970 & Jensen* (BRI); S.F. 756 Mt Father Clancy, May, 2000, *Forster PIF25723 & Booth* (BRI); 5.6 km S of Mena Creek township, SSW of Innisfail, Jul 2007, *Bean 26546* (BRI). North Kennedy District: 27.5 km south along Culpa Road, S.F. 605 Koombooloomba, May 2002, *Forster PIF28789 & Booth* (BRI); Paluma Range, Dotswood Holding, Jun 1974, *Hyland 3001* (BRI). South Kennedy District: Mt Macartney, S.F. 652 Cawley, May 1992, *Forster PIF9911 & Tucker* (BRI); Dalrymple Heights and vicinity, Jun–Nov 1947, *Clemens s.n.* (BM, BRI [AQ84447]).

***Distribution and habitat*:** This species occurs from the northern end of the Wet Tropics at Cooktown south to the Clarke Range near Eungella (**Map 15**). It grows in upland and lowland mesophyll and notophyll vineforests on substrates derived from basalts and metamorphics.



Map 15. Distribution of *Symplocos paucistaminea*

***Phenology*:** Flowers are recorded from May to August; fruit from September to December.

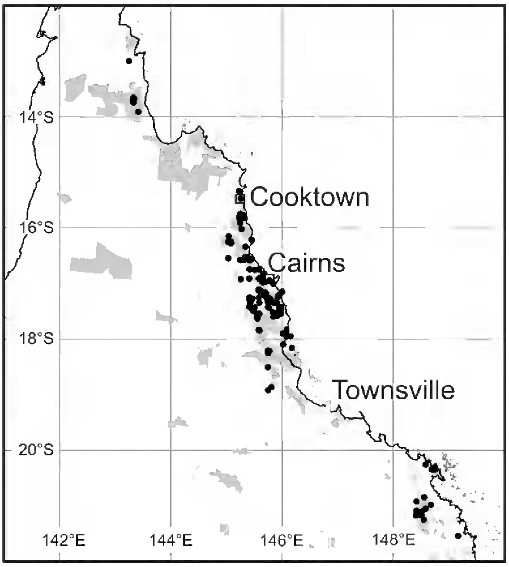
***Conservation status*:** *Symplocos paucistaminea* is widely distributed in north and central eastern Queensland and is not considered to be threatened.

16. Symplocos puberula Jessup **nom. et stat. nov.**; *S. cochinchinensis* var. *pilosiuscula* Noot., *Brunonia* 4: 320 (1982). **Type:** Queensland. Cook District: Speewah, Upper Clohesy River, 5 June 1966, *W.Rijkers NQNC14754* (holo: L; iso: BRI, CNS).

***Illustrations*:** Nooteboom (1981: Fig. 11); Hyland *et al.* (2010), both under *Symplocos cochinchinensis* var. *pilosiuscula*.

Tree to 25 m. Shoots and young branchlets appressed puberulous, young branchlets glabrescent. Leaves coriaceous; lamina oblanceolate or obovate, sometimes elliptic, 6–15 cm long, 2.5–6 cm wide, acuminate at apex, acute at base, glabrous or with a few hairs on midvein on underside; margins shallowly recurved, denticulate, nearly entire; secondary veins mostly 6–12 pairs; petiole 5–17 mm long, sparsely appressed puberulous, glabrescent. Inflorescence paniculate or racemose to 7 cm, puberulous; pedicels 0.6–2 mm long; bracts and bracteoles pubescent, caducous, bracts ovate, *c.* 1.5 mm long, bracteoles narrowly triangular, *c.* 0.8 mm long. Calyx limb 1–1.5 mm long, glabrous; lobes depressed ovate or rounded, glabrous with ciliate or denticulate margin. Petals oblong or narrowly obovate, 3.5–5 mm long, 1.7–3.5 mm wide, white, glabrous. Stamens mostly 50–70, 2–6 mm long. Disc annular, shallowly lobed, glabrous or with a few hairs. Style 3–4 mm long, glabrous or with a few hairs at base, dilated at stigma. Fruit ampulliform, 7–10 mm long, 4–6 mm wide, dark blue to black.

***Additional selected specimens examined*:** **Queensland.** Cook District: 33 km along Leo Creek road, McIlwraith Range, Jun 1995, *Forster PIF16822* (BRI); T.R. 14, Head of Peach Creek, McIlwraith Range, 26.5 km NE of Coen, Cape York Peninsula, Aug 1993, *Fell DGF3543 & Jensen* (BRI); Hopevale Aboriginal Reserve, 13.2 km ESE of Hopevale Community, Endeavour River right arm, Nov 1993, *Fell DGF3859 & Stanton* (BRI); Mt Poverty Mine Road, near Normanby Tin Mines, Jun 2003, *McDonald KRM1447* (BRI); Gap Creek, Cedar Bay N.P., Jun 1992, *Forster PIF10732 et al.* (BRI); Daintree N.P., Adeline Creek headwaters, top of hill 929, May 1999, *Forster PIF24538 & Booth* (BRI); S.F. 144, Mt Windsor Tableland, May 1979, *Moriarty 2614* (BRI); T.R. 66, 3 km along Mt Lewis Road, Jun 2000, *Forster PIF25821 & Booth* (BRI); S.F.R. 607, Shoteel L.A., Oct 1982, *Gray 2779* (BRI); S.F.R. 933, Little Pine L.A., Feb 1983, *Gray 2963* (BRI); Longlands Gap, S.F. 194, Sep 2001, *Forster PIF27514 et al.* (BRI). North Kennedy District: S.F.R. 605, Hilton L.A., Sep 1979, *Dockrill 1615* (BRI); Goold Island [Goold Island N.P.], Aug 1997, *Cumming 16252* (BRI); Conway S.F., 2 km E of Impulse Creek, along Timber Road, Sep 1994, *Perry 2* (BRI); S.F. 299 Conway, Brandy Creek Road, 8 km S of Airlie Beach, Feb 2004, *Forster PIF29974 et al.* (BRI). South Kennedy District: 1 km SW of Mt Macartney, Kangaroo Creek, Cathu S.F., Aug 1989, *Thompson 148* (BRI); St Helens Creek, Eungella N.P., Aug 1992, *Bean 4949* (BRI); Sarina Range, East Funnel Creek Road, Sarina Shire, May 2006, *Von Fahland 2* (BRI).



Map 16. Distribution of *Symplocos puberula*

***Distribution and habitat*:** This species occurs from the McIlwraith Range on Cape York Peninsula south to the Sarina Range south of Sarina (**Map 16**). Grows in mesophyll and notophyll vineforests on substrates derived from granites and metamorphics.

***Phenology*:** Flowers are recorded from May to November; fruit from December to February.

***Notes*:** This species was treated as *Symplocos cochinchinensis* var. *pilosiuscula* Noot. (as *S. cochinchinensis* subsp. *thwaitesii* var. *pilosiuscula* Noot.) in Nooteboom (1982).

***Conservation status*:** *Symplocos puberula* is widely distributed from Cape York Peninsula to central eastern Queensland and is not considered to be threatened.

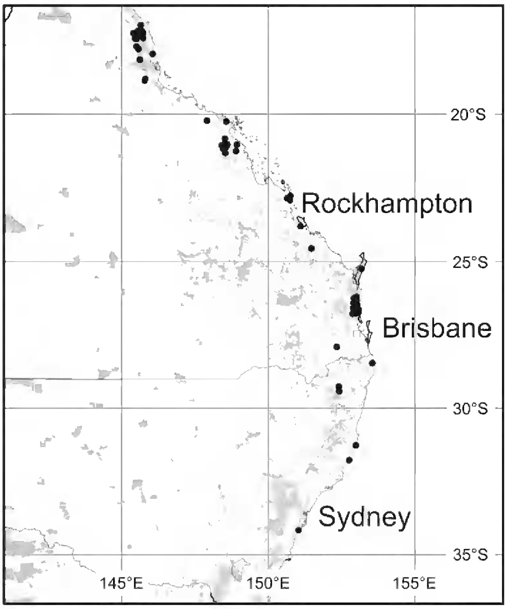
17. Symplocos stawellii F.Muell., *Fragm.* 5: 60 (1865); *S. stawellii* var. *stawellii*, C.T.White, *Proc. Roy. Soc. Queensland* 50: 82 (1939); *S. cochinchinensis* var. *stawellii* (F.Muell.) Noot., *Leiden Bot. Ser.* 1: 161 (1975). **Type:** Queensland. Rockingham Bay, *s.dat.*, *J.Dallachy s.n.* (syn: MEL).

Symplocos spicata var. *australis* Benth., *Fl. Austral.* 4: 292 (1868). **Type:** Queensland. Rockingham Bay, *s.dat. J.Dallachy s.n.* (syn: MEL); New South Wales. Richmond River, *s.dat.*, *C. Moore s.n.* (syn: NSW).

***Illustrations*:** Nooteboom (1982, Fig. 11); Hyland *et al.* (2010), both under *Symplocos cochinchinensis* var. *stawellii*; Floyd (1989: 397); Leiper *et al.* (2008: 336) both as *S. stawellii.*

Shrub or tree to 30 m. Shoots sparsely appressed pubescent, glabrescent; young branchlets glabrescent. Leaves coriaceous; lamina elliptic to oblanceolate or obovate, 6–18 cm long, 2–6 cm wide, acuminate at apex, mostly acute or attenuate at base, glabrous or with a few hairs on midvein on underside; margins serrulate and crenulate, sometimes slightly recurved; secondary veins mostly 7–10 pairs; petiole 6–25 mm long, glabrescent or glabrous. Inflorescence axes branched, spicate, to 6 cm long, pubescent; bracts and bracteoles broadly or depressed ovate, sparsely pubescent or glabrous, ciliate, persistent to fruiting, bracts 0.8–1.5 mm long, bracteoles 0.6–0.8 mm long. Calyx limb 0.3–0.5 mm long, glabrous; lobes very shallowly rounded or depressed ovate, 0.1–0.4 mm long, glabrous or nearly so and with a ciliate margin. Petals obovate, 3.2–3.5 mm long, 1.7–2.5 mm wide, white, glabrous. Stamens mostly 30–50, 1.5–3 mm long. Disc 5-lobed, glabrous. Style 2.5–3.5 mm long, glabrous. Fruit mostly ovoid, 5–5.5 mm long, 3.5–4.5 mm wide, blue to black.

***Additional selected specimens examined*:** **Queensland.** Cook District: Lake Barrine, Atherton Tableland, Sep 1929, *Kajewski 1237* (BRI, L, P); Malanda – Atherton Road, May 1976, *Stocker 1438* (BRI, CNS, L). North Kennedy District: S.F.R. 251, Parish of Ravenshoe, Jun 1988, *Gray 4844* (BRI, CNS). South Kennedy District: Dalrymple Road, Eungella N.P., Apr 2000, *Forster PIF25512 & Booth* (BRI); S.F.R. 679, Range L.A., 1 km S of Crediton, Clarke Range, Jun 2001, *Ford AF2887* (BRI). Port Curtis District: Byfield N.P., 9 km ENE of Byfield township, Sep 2000, *Forster PIF26237 et al.* (BRI). Wide Bay District: Verrierdale Road, 8 km W of Peregian Beach, May 1990, *Bean 1589* (BRI). Moreton District: Running Creek, *c.* 2 miles [3.2 km] NW of Yandina, May 1969, *Smith 14616* (BRI). **New South Wales.** Coombadjha Creek Road, Apr 1980, *Floyd 1477* (BRI); Johns River near Newcastle, May 1956, *Webb & Tracey 3691* (BRI).



Map 17. Distribution of *Symplocos stawellii*

***Distribution and habitat*:** This species is widespread in eastern Queensland and New South Wales from the Hann Tableland, northwest of Mareeba to near Windsor, New South Wales (**Map 17**). It generally grows in notophyll vineforests, although it sometimes occurs as an understorey tree in moist eucalypt forest. Substrates are diverse.

***Phenology*:** Flowers are recorded from April to August; fruit from November to January.

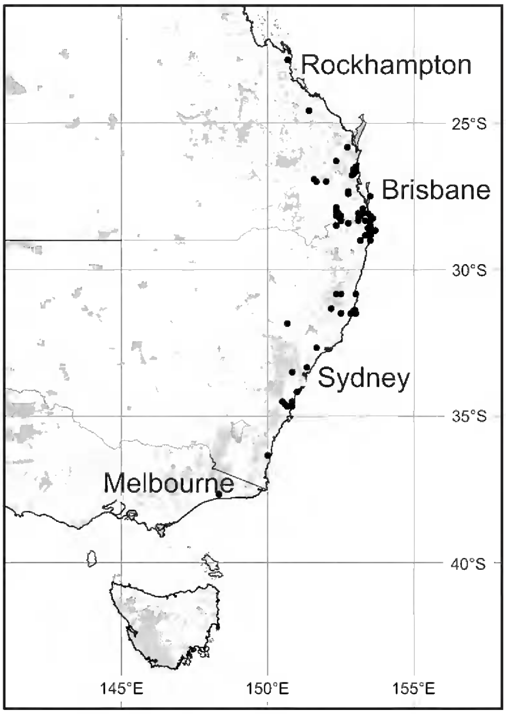
***Conservation status*:** *Symplocos stawellii* is widely distributed from north Queensland to central eastern New South Wales and is not considered to be threatened.

18. Symplocos thwaitesii F.Muell., *Fragm.* 3: 22 (1862); *S. cochinchinensis* subsp. *thwaitesii* (F.Muell.) Noot., *Leiden Bot. Ser.* 1: 159 (1975); *S. cochinchinensis* var. *thwaitesii* (F.Muell.) Noot., *Leiden Bot. Ser.* 1: 160 (1975). **Type:** New South Wales. Hastings River, *s.dat.*, *Beckler s.n.* (holo: MEL46540, 46541; iso: BRI, P).

***Illustrations*:** Nooteboom (1982, Fig. 11) under *S. cochinchinensis* var. *thwaitesii*; Floyd (1989: 397) as *S. thwaitesii*.

Shrub or tree to 20 m. Shoots and young branchlets glabrous. Leaves coriaceous; lamina oblanceolate, narrowly obovate or elliptic, mostly 6–16 cm long, 1.5–5 cm wide, acuminate, acute or obtuse at apex, acute or attenuate at base, glabrous; margins serrate; secondary veins mostly 8–11 pairs; petiole 5–15 mm long, glabrous. Inflorescence paniculate or racemose to 7 cm, glabrous; pedicels 0–8 mm long; bracts and bracteoles obovate to triangular, glabrous or scarcely ciliate, caducous, bracts 1.5–4 mm long, bracteoles 1–2 mm long. Calyx limb 1.7–2 mm long, glabrous; lobes depressed obovate, 1.4–1.6 mm long glabrous. Petals broadly obovate, mostly 4.5–7 mm long, 3.5–5 mm wide, white, glabrous. Stamens 80–100, 2–5 mm long. Disc glabrous. Style 4–5 mm long, glabrous. Fruit ovoid to ampulliform, 6–11 mm long, 4–8 mm wide, blue, purple or black.

***Additional selected specimens examined*:** **Queensland.** Port Curtis District: Isopod, Mt Parnassus, Oct 1976, *Hyland 4314RFK* (BRI); Bulburin S.F. 67, Apr 1980, *McDonald 3220 et al.* (BRI). Wide Bay District: The Missings, S.F. 915 Tuan, Dec 1994, *Forster PIF16046 et al.* (BRI); S.F. 639 Wrattens, Beauty Spot 50, end of Black Snake Road, Jan 2003, *Haskard & Smyrell s.n.* (BRI [AQ772885]); *c.* 2 miles [3.2 km] NE Maleny, May 1959, *Thorne 21263 et al.* (BRI); Mary Cairncross Park, Sep 2004, *Russell s.n.* (BRI [AQ613832]). Burnett District: Bunya Mountains, Oct 1919, *White s.n.* (BRI [AQ84418]). Moreton District: Brolga N.P., W of Woombye, Feb 1990, *Bean 1349* (BRI); Walking track between Lawnton Road & Joyners Ridge Road, *c.* 1 km from Lawton Road, Mt Glorious, Sep 2002, *Phillips 783* (BRI); Mt Glorious *c.* 50 km W of Brisbane, Sep 1978, *Jessup 147 & Reynolds* (BRI); Mt Mistake, May 1948, *Smith 3689 & Webb* (BRI); Cainbable Range, Oct 1952, *Lahey s.n.* (BRI [AQ478660]); Burleigh Heads N.P., Tallebudgera, Jul 1978, *McDonald 2165 et al.* (BRI). Darling Downs District: Mt Cordeaux, just below the summit, Dec 1981, *Guymer 1661 & Jessup* (BRI); The Head, Main Range N.P., Jan 2002, *Forster PIF28066 & Leiper* (BRI); Border of Lamington N.P., Sarabah Range, Oct 1969, *Schodde 5576* (BRI). **New South Wales.** Unumgar near base of Mt Lindsay, Nov 1944, *Jones s.n.* (BRI [AQ84429]); Booyong Reserve NE of Lismore, Nov 1982, *Floyd s.n.* (BRI [AQ393589]); *c.* 1 mile [1.6 km] S of Port Macquarie, Oct 1966, *Schodde 5152* (BRI, CANB, L); Robertson Nature Reserve, Jun 1994, *Kodela 315 et al.* (BRI). **Victoria.** Spur between two gullies entering Snowy River on W bank of Wood Point [13 km NW of Orbost], Mar 1976, *Cameron 6132a* (MEL).



Map 18. Distribution of *Symplocos thwaitesii*

***Distribution and habitat*:** Endemic to eastern Australia from central Queensland (Mt Parnassus near Rockhampton) south to the Snowy River in Victoria (**Map 18**). Grows mostly in notophyll vine forest on substrates derived primarily from basalts and granites.

***Phenology*:** Flowers are recorded from September to November; fruit in February.

***Conservation status*:** *Symplocos thwaitesii* is widely distributed and is not considered to be threatened.

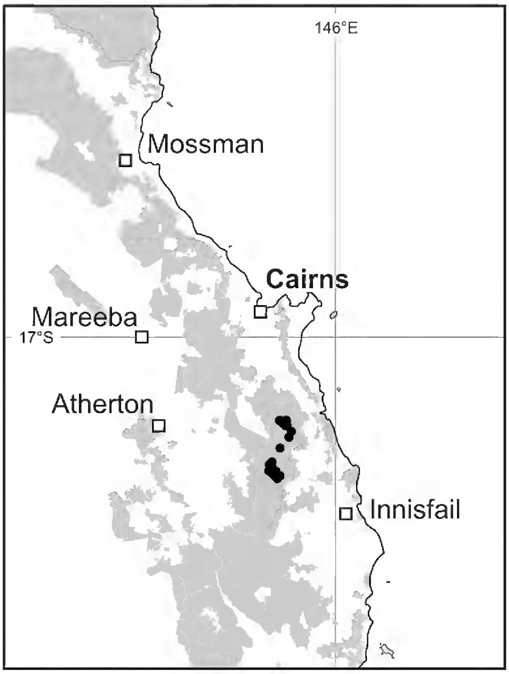
19. Symplocos wooroonooran Jessup **nom. et stat. nov.**; *S. stawellii* var. *montana* C.T.White, *Proc. Roy. Soc. Queensland* 50:82 (1939); *S. cochinchinensis* var. *montana* (C.T.White) Noot., *Leiden Bot. Ser.* 1: 160 (1975). **Type:** Queensland. Cook District: Mt Bartle Frere, 7 October 1938, *H.Flecker 857* (holo: BRI).

***Illustrations*:** Cooper & Cooper (2004: 539); Hyland *et al.* (2010), both under *Symplocos stawellii* var. *montana.*

Tree to 8 m. Shoots appressed pubescent, glabrescent; young branchlets glabrescent. Leaves chartaceous to thinly coriaceous; lamina oblanceolate to elliptic, 2–6.5 cm long, 0.9–2.4 cm wide, acuminate at apex, mostly attenuate at base, glabrous or nearly so; margins recurved, remotely denticulate or sometimes entire; secondary veins mostly 7–10 pairs; petiole 2.5–4.5 mm long, glabrescent or glabrous. Inflorescence axes 2 or 3, racemose, to 1.5 cm long, lightly appressed puberulous, branching at base, sometimes single; pedicels 0–1 mm long; bracts and bracteoles ovate, sparsely puberulous, ciliate, mostly persistent until after anthesis, bracts 1–2 mm long, bracteoles 0.6–1 mm long. Calyx limb 0.75–1 mm, glabrous; lobes depressed ovate, triangular or shortly oblong, rounded, 0.5–0.8 mm long, glabrous. Petals oblong or obovate, 4–5 mm long, white, glabrous. Stamens mostly 30–35. Disc pubescent. Style 3–3.5 mm long, pubescent near base. Fruit ampulliform, 5.8–6.3 mm long, 4–5.5 mm wide, black. **Fig. 3E–G.**

Additional selected specimens examined: Queensland. Cook District: S.F.R. 310, Upper Goldsborough L.A., Sep 1976, Dockrill 1278 (BRI); Bellenden Ker, s.dat., Johnson s.n. (BRI [AQ519814]; MEL46558, 46559, 46560, 46561, 46562); Summit of Mt Bellenden Ker, Aug 1971, Hyland 5304 & 5316 (BRI); N.P.R. 226, Bellenden Ker, Jan 1972, Hyland 5775 (BRI); Bellenden Ker Range, Oct 1974, Hyland 7769 (BRI); Centre Peak, near TV tower, summit of Bellenden Ker, Nov 1972, Webb & Tracey 10802 (BRI); Mt Bellenden Ker, Jun 1969, Smith 14630 (BRI); loc. cit., May 2001, Cooper 1525 & Cooper (BRI); Wooroonooran N.P., Mt Bellenden Ker summit area, Dec 2000, Forster PIF26516 et al. (BRI); Mt Bartle Frere, Oct 1935, Blake 9843 (BRI); loc. cit., Nov 1966, Gilmour 4076 (BRI); S.F.R. 755, Gosschalk L.A., Gray 702 (BRI); Summit area of Mt Bartle Frere, Sep 1977, Powell 833 et al. (BRI); Wooroonooran N.P., Bartle Frere, first heath to SE of South Peak, Oct 1997, Forster PIF21767 et al. (BRI).

***Distribution and habitat*:** This species is endemic to the Wet Tropics of Queensland where it occurs only on the upper slopes and summits of Mt Bartle Frere and Mt Bellenden Ker in Wooroonooran N.P. (**Map 19**). It grows in montane rainforest (simple microphyll vine-fern thicket and shrubland) on granite derived substrates.



Map 19. Distribution of *Symplocos wooroonooran*

***Phenology*:** Flowers are recorded in October and November; fruit from January to May.

***Notes*:** This species was treated as *Symplocos cochinchinensis* var. *montana* (C.T.White) Noot. (as *S. cochinchinensis* subsp. *thwaitesii* var. *montana*) in Nooteboom (1982).

***Conservation status*:** *Symplocos wooroonooran* (as *Symplocos stawellii* var. *montana*) is currently listed as Near Threatened under the *NCA*.

***Etymology*:** The species epithet commemorates the botanically diverse Wooroonooran N.P. and is also the aboriginal name for Mt Bellenden Ker (Bailey 1900a).

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